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ABSTRACT

This collection of essays and responses by 18 specialists and librarians focuses on three research perspectives: (1) governmental, economic, and technological changes; (2) possible results of change in the humanities, education, and social institutions; and (3) the process of change and ways to create conditions for change. Each specialist's essay is followed by a librarian's response which highlights the essay's implications for librarians and expresses a point of view. Papers include the following: The Last Quarter-Century: Change as Challenge--or as Catastrophe, by Kenneth W. Thompson; The Future of Government: Trends and Emerging Conditions, by Clement Bezold; Prospects for Women in the Paid Labor Market, by Ralph Smith; Interactive Electronic Media, by Bruce A. Sherwood; Project: Knowledge 2000, by R. Lynn Carroll; Education in America: The Next Twenty-five Years, by Harold G. Shane; Changes in Sexual Identities, by Helena Z. Lopata; and Creating the Conditions for Change, by Donald P. Ely. The librarian respondents are Jesse H. Shera, Eileen D. Cooke, Jane Cooney, Gerald R. Brong, John P. McDonald, Crystal M. Bailey, Gerald R. Shields, and Hugh C. Atkinson. (FM)

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Changing Times: Changing Libraries

GEORGE S. BONN
SYLVIA FAIBISOFF

editors

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CONTENTS

Introduction vii
GEORGE S. BONN and SYLVIA FAIBISOFF

The Last Quarter-Century: Change as Challenge — or as Catastrophe 1
KENNETH W. THOMPSON
Response: JESSE H. SHERA 14

Some Causes of Change

The Future of Government: Trends and Emerging Conditions 23
CLEMENT BEZOLD
Response: EILEEN D. COOKE 53

Prospects for Women in the Paid Labor Market 59
RALPH SMITH
Response: JANE COONEY 70

Interactive Electronic Media 81
BRUCE A. SHERWOOD
Response: GERALD R. BRONG 91

Some Results of Change

Project: Knowledge 2000 97
R. LYNN CARROLL
Response: JOHN P. McDONALD 103

Education in America: The Next Twenty-five Years 113
HAROLD G. SHANE
Response: CRYSTAL M. BAILEY 126

Changes in Sexual Identities 131
HELENA Z. LOPATA
Response: GERALD R. SHIELDS 140

Process of Change

Response: HUGH C. ATKINSON 145

Creating the Conditions for Change 150
DONALD P. ELY

Acronyms 163

Index 165

INTRODUCTION

For the past twenty-three years, the University of Illinois Graduate School of Library Science has held annual 3-day institutes on a variety of topics of interest to librarians. In this bicentennial year it seemed appropriate for the institute to look to the future, to the possible social, scientific and technological trends that may shape our lives as the United States enters its third century. With this in mind, a group of distinguished specialists and librarians was assembled to discuss social change and its implications for libraries.

Lacking a crystal ball, scientists, economists, political scientists, businessmen, educators, and other professionals are nevertheless trying to understand and possibly to forecast future developments. Since social change is inevitable, librarians must be ready and alert to understand, explain and cope with change during their professional lives. The specialists invited to the institute were asked to discuss from their own research perspectives: (1) three major causes of change — government, economic conditions, and science and technology; (2) possible results of change in three areas of vital interest — humanities (including leisure and morals), education and social institutions; and (3) the process of change and ways to create conditions for change. Librarian respondents were to point out various implications for librarians of the remarks made by each of the specialists, and to be ready with their own views on the topics if necessary.

At the opening session Kenneth Thompson reflects on the sometimes catastrophic effects of change on our society in the last quarter-century. In his opinion the major predicaments besetting our society include: (1) the decline and breakup of long-established social and political institutions (resulting in a loss of old values without new ones to replace them, and thus in the lack of a relevant framework in which to understand rapidly-moving events); and (2) the fact that education, which should be in the vanguard, is too often just holding up the rear.

Jesse Shera notes that libraries can accept either the catastrophe or the challenge, ominously suggesting that libraries, as the creation of society, could also be destroyed by it — unless they are willing to assume greater responsibility. Libraries must not only be the memory of society, but must be prepared to communicate knowledge and to serve other needs of all their users, by definition, the library "elite." Librarians must know their communities and be trained to provide the resources to enable people to make educated decisions about solutions to present and future problems. Librarians must be "lantern bearers."

Government as a cause of change is discussed by Clement Bezold and respondent Eileen Cooke. Bezold views the future of government for the next ten to twenty-five years from the perspectives of budget and of images taken from the major futurist works on government. He feels that both aspects raise questions about how the agenda of government will be shaped in the future. In an extremely penetrating analysis, he discusses policy implications of the shift in our "societal paradigm." He notes a growing concern in government for the future, and the need for citizens to participate in decision-making and to anticipate problems before they become critical. In her response, Eileen Cooke urges librarians to become familiar with governmental processes and particularly with those laws affecting themselves, e.g., copyright, the Education Amendments Act of 1976, etc.

Ralph Smith, an expert on women in the labor market, and respondent Jane Cooney discuss the role of women in the paid labor market. Smith notes that women will continue to enter the labor market at a rate faster than that of men, and comments on the continuing narrow range of occupations existing for women, patterns of segregation, and lower compensation. Cooney discusses predictions about the composition of the future library job market. She also foresees continuing demand for certain types of library professionals and a need for library schools to prepare new courses of study to emphasize new skills and specialties in demand.

Unfortunately, the graphic display of PLATO's capabilities as an instructional tool, demonstrated by Bruce Sherwood during the institute, cannot be reproduced in this volume. His presentation, however, confirms the capability of electronic media such as PLATO to strengthen individualized self-instruction, as well as to serve as an electronic communications device. He also comments on the future uses of video discs as media for print storage.

Gerald Brong is somewhat less optimistic and far more cautious than

Sherwood in advocating the use of electronic media. He notes that most librarians are not taking full advantage of the current technology, and questions whether they are ready for PLATO or video discs. He emphasizes cautious use of video discs (noting their high production cost), the need for the right person to handle the material, and familiarity with content. He also touches briefly on the use of the minicomputer, and considers — as does Sherwood — the problem of copyright royalties.

R. Lynn Carroll opens discussion on the results of change by summarizing the proceedings of Project: Knowledge 2000, the National Science Foundation project to define knowledge needs and requirements of the country in the next quarter-century. Carroll notes the movement from a sacred to a secular society and its implications for the change from religion and family to communication and education as sources of indoctrination and socialization. He notes the need for nontechnological knowledge, the growing interest in intuitive knowledge, and the need to increase levels of public participation, commenting that the creation of knowledge does not necessarily imply its use. He also notes that society is intrinsically involved with the manipulation of symbols and words, and stresses the problems of values.

John McDonald is concerned with the effect of these changes on libraries, noting that the technology developed primarily serves the needs of science and technology rather than the needs of the humanities or social sciences. He predicts a major shift in the needs of universities, a deemphasis on doctoral programs, and a shift toward in-service training. He notes the need for cooperation rather than competition among libraries, stating that "information must be viewed as a national resource."

In his discussion of education in the next twenty-five years, Harold Shane first outlines the methodology used in futures research and presents the views of outstanding educators and futurists on the role of education. Shane observes that we are reaching the end of the hydrocarbon age, but are doing nothing about it; that we are faced with a "postextravagant" society in which material gains have not solved human anxiety. He urges an awareness or reappraisal of the notion that growth is necessarily good. In her response, Crystal Bailey comments on an earlier idea of Shane's recommending elimination or artificial divisions of learning experience for elementary, junior high and high school students. She observes that children's libraries are paradoxically protective and discriminating — against children as well as adults. She cites a need for understanding the information needs of children and for greater moral and financial support of children's library work by administrators.

Helena Lopata and Gerald Shields address the problems of effects of change on social institutions. Lopata examines the results of social change for social institutions such as the community and the family. She takes a historical approach to change, noting the evolution from a relatively stable, urban and industrialized world to a postindustrial, middle-class society exhibiting growing duress and the breakup of the family unit. She stresses the dramatic changes in the lives of Europeans and Americans in the last few centuries as social roles and interpersonal relationships have undergone considerable change. Responding to Lopata's presentation, Shields indicates that librarianship must be reduced to humanism. He believes that to say that libraries are solely institutions of education or recreation is to misapply what society asks of librarians.

An unscheduled change took place in the final session of the institute. Hugh Atkinson, the respondent scheduled to comment on Donald Ely's presentation, was asked to speak first; his remarks were then followed by Ely's discussion of the nature of change. Atkinson introduces three concepts of change: quick change (things that are available now), small change (i.e. routine changes), and loose change (things unknown now that will nevertheless affect libraries in the future). He points out that the challenge to change is survival. Following Atkinson, Ely states that change should be evaluated so that both the individual and the institution can participate "in helping to create the future rather than be shaped by it." He emphasizes the responsibilities imposed on librarians by change, the need for leadership, the importance of readiness and persuasion in effecting change.

A great deal of interaction took place during the conference and between sessions among institute speakers, respondents and participants. All had an opportunity to air ideas, ask questions and offer suggestions for future action. The participants understood that the purpose of the institute was to stimulate thinking and to identify issues rather than to provide answers. It was the hope of the planning committee that at the end of the conference, participants would be more aware of the inevitable impact of social change on librarians during their lifetime.

Program planning was directed by George S. Bonn and Sylvia G. Faibisoff (cochairpersons), James Divilbiss, Herbert Goldhor, and Kenneth O'Malley of the University of Illinois Graduate School of Library Science, and Alan Knox, the university's Vice Chancellor for Academic Affairs. Thanks are due to students of the library school who took notes during oral presentations, including Richard Blue, Linda Lucas, Larry Auld, Amelia Bernal-Rosa, Anders Dahlgren, Nat Davis, and Tille Krieger. Linda Hoffman coordinated editing, revision and publication of the papers in this volume.

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The Last Quarter-Century: Change as Challenge—or as Catastrophe

Because most of us are "little conservatives" or "little liberals," we are baffled, divided and troubled by change. Most of our judgments about change reflect in some measure our varying temperaments and styles. Either we function best with things as they are in familiar surroundings where stimuli and responses are predictable and routine, or we demand bold new challenges and large opportunities to make life worth living. It is the beginning of wisdom to recognize that in our response to change we are not the same, and we do not help one another by blind insistence that we are. There is no such thing as one objective response to change; each of us responds from the ground on which he or she stands.

In the late 1960s, a whole generation, not given to modest formulations, confronted the rest of society saying that they were not, and did not intend to be, merely their fathers' children. Given the excesses and self-indulgences of some phases of the youth movement, we are tempted to view this rebellion as a rather unhealthy aberration not in keeping with the untroubled advance of the civilization. Our response might be more constructive if, for this somewhat painful era, we could separate the wheat from the chaff and use it to gain an important lesson. Confronted with change and coping in various ways with the contradictions and inconsistencies of our culture, we are pilgrims striving to hold to an uncertain and essentially uncharted course. As Lincoln put it, "We would know better what to do if we knew whither we were tending" — but for today this seems largely denied and beyond us.

It is, of course, a truism that change for all men is the first law of the universe. The histories of those of our parents and grandparents who were immigrants refute the proposition that the past was a succession of known, predictable and settled events. These people made their way across a continent with its languages, customs and people as strange as its vast expanse and unexplored frontiers. Some triumphed over suffering and adversity and are celebrated as "giants in the earth"; others, including those who had known success in other lands, fought valiantly to cope with change only to succumb to forces beyond their control. They went to their graves with unfulfilled hopes and the dream of a promised land which, for them, had proved too harsh and demanding to realize. They were victims of a new world for which they were unsuited, unlucky and unprepared; they left to their successors the rewards of achieving "life, liberty, and the pursuit of happiness." For both those who found success and a new life and those who failed to do so, existence was grounded on certain fixed points and assumptions. Most of them had faith that hard work would bring both material and spiritual rewards. They prayed to the same God; read the same historical texts; held to the same attitudes toward church, state and society; and struggled to preserve family loyalties and community structures. Their doubts centered more on the capriciousness of nature than on the unpredictability of human nature. They knew enough to respect the violence and destructiveness of winds and weather — but not so much that they were immobilized and helpless before man's uncontrolled passions and the fury of storms unleashed in civilized mass societies. They knew the pain (if not all the possible causes) of individual breakdowns, but not the cataclysmic effects of society's breakdown in holocausts, total wars, thermonuclear peril, and worldwide economic disruptions. The immigrants grew to have national pride, but not that degree of fanatic national self-righteousness which justified the wholesale slaughter of millions of German Jews or Russian kulaks to further a single national cause. There was wrongdoing, blood spilled, and lives were taken of native peoples who blocked their march across the continent, but their cruelty was less rationally organized or totally sanctified than nazism or Stalinist communism (in which religion, historical inevitability, and nationalism were inextricably joined). "If we had done for ourselves what we did for the state, what scoundrels we would have been," wrote an Italian nationalist. In earlier generations, countervailing powers kept imperial conquest and national ambition in check. More importantly, men's lives were anchored in a set of unchanging beliefs and convictions.

Some of us have known the majesty of such a faith in our parents and grandparents. My mother ended her 95 years this summer, and having spent 42 days at her hospital bedside I wrote the following lines:

> Her joy was in service to others — service given with such selflessness and grace that no one could say she made them dependent — the curse of so much self-conscious giving. . . . She became a brilliant concert pianist performing in Europe and the United States. The success of her pupils, though, gave even more satisfaction. She was unsparing of them and herself as they prepared for recitals, but when they faltered she shielded them from crippling disappointment. Her discipline was painless because her love was so vast.
>
> When she was ill, friends came to cheer her up, but left having been cheered up by her. She knew how to forgive, hundreds and thousands of times. I know, I led the list of those forgiven.
>
> She praised God, not by words but through the example of her life. . . . She taught that anything worth doing was worth doing well — from perfecting a concerto to counseling a child. . . . Her sympathy was boundless. . . . By the power of gentleness and kindness, she drew out some of the pain from raw open wounds; her love was a poultice, her concern a source of healing. Whatever the problem, she listened and understood and, for me at least, the warmth of her living room took the place of the minister's study or the psychiatrist's couch.
>
> Trust was for her a way of life. . . . She spent less time questioning intentions and motives, more time looking for good works that needed doing, good thoughts that needed thinking. . . . Yet all her gentler virtues could never explain her 95 years. She was driven by an inner fire. Her determination had roots in deep-seated spiritual resources and her tireless heart sustained a frail body until the very end. . . . She remained busy even in her final reveries, concerned for others when confused, aware of human pathos when perplexed about her own.
>
> What crowned all her hard work, patience and sympathy, trust and determination, and made her loneliness tolerable was her love of God, family and friends, life and music.
>
> Love led to service to others, to the search for worthy ends, to doing for herself by doing for others.

A very wise physician who called on her two or three times a day during her final illness observed, "They don't make them like that anymore." He might have added that the structure of faith and values that nurtured her and provided the fixed points in her life had also died for most of the culture decades before her passing. The serenity she felt in life and death, which gave her the will to live, is not present today for most of us — and this, as much as the kaleidoscope of change, is the major source of our problem. Neither cynicism about values nor easy moral rhetoric can remove the predicament. It is a predicament which can lead either to a sense of catastrophe or to a heightened awareness of challenges to man's innermost resources. Quiet reflection and intellectual honesty prompt the recognition that most of us, at one time or another, experience alternately quiet desperation and renewed resolve in facing the future. It will not do for educators either to teach opportunity and ignore the crisis or to talk only of the crisis. It is vital that we see the problem of change through the eyes of both those who anticipate catastrophe and those who are awakened to new and unprecedented challenges by change.

CATASTROPHE

The most poignant moment of the 1976 Republican national convention was a late-evening conversation televised from Kansas City between Vice-president Nelson Rockefeller and Senator Barry Goldwater. Bitter political foes through the 1950s and 1960s, they found themselves embracing one another in 1976 and on most major issues were in substantial accord. Probing for an explanation for their new-found unity, Walter Cronkite asked Rockefeller to explain the reasons. The former governor of New York, whose administration had brought the powers of government forcefully to bear on the economy, education, public works, and the building of a vast transportation network for the state, acknowledged rather plaintively that most, if not all, of these interventions had failed. It was his experience, he confessed, that government lacked the know-how, the resources, and the will to solve or even to mitigate the great intractable problems of the day. What flashed through the mind of at least one viewer was another political convention in Chicago eight years earlier, at which lines of young protesters chanted that the system was not working and at best should be given only one more chance. We hear that "the government is not working" too often for those melancholy words not to give us pause.

If partisan political declarations were the only indicators of crisis and catastrophe, we might have less cause for alarm, but the root causes run deeper. They extend from the first signs that the nation's civilization may be going the way of past civilizations (about which historians from Gibbon to Toynbee have written), to the breakup and decline of long-established social and political institutions, such as the nation-state, the family and the church. When Secretary of State Kissinger in a moment of political indiscretion noted that America's position as the one preeminent world power might be passing, he unleashed a small army — and navy! — of critics. Yet Kissinger may have been more prophetic than those who denounced him.

What is unique about the present crisis, whether seen as a whole or only as it touches specific institutions, is that old values and patterns appear to be losing their hold, although new ones are not taking their place. The nation-state for all practical purposes is inadequate if not obsolete in an interdependent world; but neither world government (of which ones hears less and less) nor strong regional political systems are having much success. The family is in decline, or is being bent and reshaped to a point that scarcely resembles its basic and integral character. As one young man observed, the trouble with the alternatives is the almost total absence of rules and dependable mutual responsibilities. Religion and tradition, across a broad spectrum ranging from art to reverence for life, have been brought into question or recast in postmodern terms where anything goes. Art without standards, however, is no better than life without values, not because goals and worthy purposes are ever fully realized (this was the fallacy of the mass indictments leveled by middle-class young people against their parents in the late 1960s), but because human potential is realized in some measure only in the tension between the ideal and the real.

According to an ancient Indonesian saying, it is a terrible thing to have a reasonable father. For young people, the need has never been greater to test their ideas against firmly held parental ideals, not against a moral and intellectual vacuum. Because there has been too much authoritarianism in contemporary society (whether exhibited in the imperial presidency or the authoritarian father), we have tended to assume that no one need ever be in charge. Instinctively, we know that a leaderless society brings little happiness and peace of mind. When a president such as Truman takes charge and makes decisions, he grows in stature as historians review and reassess his administration. Because society has lost faith that it can solve its problems, it celebrates those who rise to meet the challenge.

For most Americans, however, the moments of celebration are few and far between. Kenneth Clark tells us that the heaviest toll taken by the ghetto in American cities is the destruction of all hope for its inhabitants. The sense of impotence to effect change is, however, no monopoly of black people in urban areas. If there was political apathy in the 1976 presidential election, it stemmed in part from doubts that anyone in high office could make a difference. As one journalist observed in the *Washington Post* after the election, the best efforts of the last four presidents had ended in disaster, disgrace or defeat. What reason was there to expect that a successor, whatever his promises, could make a difference? Society was out of control and it seemed that nothing could be done to bring it under control.

If we look beyond both the election and individual leaders to the more general causes of despair and apocalyptic thinking, other factors are contributory. Some may continue to elude our best thought and imagination, but others are not beyond repair. One has to do with what René DuBois calls the autonomy of science. Science by its own momentum makes policy decisions for mankind. Technology provides the means for building larger and faster airplanes, automobiles which demand more gasoline and highways and produce more pollution, and armaments increasingly lethal and destructive. Physicist Herbert York explains that for armaments, the line separating research and development from procurement and production is virtually indistinguishable. Once scientists have demonstrated that the latest armaments are feasible, they will have begun their procurement. The ability to produce new weaponry becomes tantamount to its production. It becomes more and more difficult for the citizen decision-maker to break into the process and arrest the building of new defense systems once scientists establish their feasibility. The SST decision by Congress may be the exception to what has seemed to be an irreversible chain of events. The decision whether or not to build the B-1 bomber may prove to be another test case, the results of which now remain open to speculation and the weight of contending experts and interest groups.

Another contributing factor to the public's sense of impotence is the lack of a relevant framework for understanding the rapidly moving events that whirl around bewildered citizens. For the future is will not be enough to say "trust the people," and then to bury them in a blizzard of reports of seemingly unconnected and unexplained events. Political messages in election campaigns, as well as the daily barrage of rapid-fire evening news items, are delivered in 30-second capsules interspersed with 45-second commercials, leaving context and background to the citizen's ignorance, uncertainty and prejudice. What is needed at every point are anchors for the culture, and neither politicians, newsmen, nor model-building social scientists or philosophers are filling the void. Consequently, society, tossed about by the winds of change, is bereft of moorings and grounding.

Finally, education, which for most of mankind has been its last best hope, is itself contributing to the present malaise. In the 1960s, a leading American foundation announced it was prepared to assist scholars who proposed to study major foreign policy problems anticipated two to five years ahead but which were not currently on the agenda of the secretary of state. The announcement brought less than a handful of responses — in contrast with a flood of proposals on simulation studies, model-building and decision-making theories.

In moments of candor, we educators who feverishly pursue our interests need to admit that no area of human endeavor is more dominated by fads and fashions than ours, more controlled by old and new establishments and cliques, and more swept along by currently acceptable dogmas and methodologies. We need to recognize that there is a perfectly astounding amount of intolerance in the scholarly world. I have repeatedly observed the process at work, whereby the "outs" became the "ins," and heterodox and unorthodox thinkers created their own new orthodoxies. Once they had influence, those who were long denied entrance to the corridors of power slammed the doors to others coming after them. Indeed, it is difficult to name more than a very few academic thinkers whose influence on public policy, broadly conceived, has made a difference. The fragmentation of education and research leads to the isolation of one aspect of a problem — and to the pretense that understanding it means understanding the whole. The rash of investigations of human sexuality (some undoubtedly long overdue), which equate statistical evidence on the percentage rate of sexual gratification of white urban females aged 23 to 27 with long and happy marriages, is only the latest example of such fragmentation of knowledge.

It is not surprising, therefore, that from no group more than the educators have lamentations been greater concerning the impending catastrophe. One publicist wrote that while scholars have fiddled, the cities and bomb-packed world are burning. Although this indictment is probably too severe, those of us who live our days in the cloistered academic world need to acknowledge that, all too often, major initiatives for response to change come not from intellectuals but from the man on the street. Education, which ought to be in the vanguard, often brings up the rear. The great issues of values, of justice and peace, equality and order, are evidently too large for academics to chew. Although there are signs that the prevailing school of value-free social science is dispirited and divided, its numbers and influence persist. Paging through the journals will quell any doubts. The scholarly world stands fragmented and divided, atomized and quantifying, and counting and refining in the face of life-and-death decisions that call for profound value choices.

There is deep pathos in education's tragic failure to see change as challenge rather than as catastrophe. The root cause of man's problem in coping with change is one for which educated thinkers have what economists call a comparative advantage. We tend to see the apocalypse in each new expression of change because we are crippled by a sense of powerlessness. The great choices which lie before us seem to require some form of collective action. Faced by this, the solitary individual resigns himself to a sense of impotence and inertia. Our problems are so immensely complicated and difficult that individuals conclude there is little or nothing they can do. Questions of justice and a just society lie beyond the reach, for instance, of logical positivism and linguistic analysis; for the contemporary philosopher, in comparison with William James or Reinhold Niebuhr, justice loses its sense of urgency. Once-hallowed issues of moral reasoning are pushed aside in the practical management of large hospitals, prisons and schools, to say nothing of big government. Apathy and inertia thus take the place of compassion and social conscience. Educators put the capstone on a moral and intellectual atmosphere which accepts the possibility of catastrophe. Reality is too large for microtheory. Nevertheless, it is precisely in the area where mind and spirit meet that classical education has traditionally made its most lasting contribution.

CHALLENGE

Fortunately, the failure of education and of society in general to meet novel and apparently insoluble problems of change is not universal. Often, on the periphery of establishment groups in education and public policy, there are signs of a qualitatively different approach. Harvard's greatest legal scholar, Paul Freund, calls for a return to the ancient tradition of moral reasoning. John Rawls through his *Theory of Justice* has stirred discussion and controversy reminiscent of the debates that went on in the Harvard of James, Hocking, and Royce. The literature of the past several decades in international relations has thrown the spotlight on the conflicting imperatives of national interest and world order. In its report, the Institute of Society, Ethics and the Life Sciences at the Hastings Center deals with such topics as "The Right to Die in California," "Sterilizing the Poor and the Incompetent," and "The Legal Right to Health Care." New journals on philosophy and public policy are springing up, and a 7-university consortium fellowship program has chosen world order and world politics as its organizing theme. Jimmy Carter has conducted a winning campaign unashamedly centering on "love and justice," and the electorate apparently finds a note of credibility in the claim that too few people have acquired too much power within the geographical confines of one city.

The road ahead is long and tortuous, and there is as much reason to fear as to rejoice over the first faint signs of response. It is one thing to write or talk of justice and another to point the way to implanting justice. The French philosopher Paul Ricouer has helped to crystallize our thinking by suggesting that the day of the lonely individual "good Samaritan" has passed, and that what we are witnessing today is the effort to filter such justice and compassion, as we know them, through vast sprawling networks of public and private bureaucracy. For health care, old-age retirement, and unemployment, this is the machinery by which society seeks to give each man his due. Our ethicists implore us to understand that ethics must be spelled out in different contexts for differing circumstances and for quite specific situations. All this occurs within the exigencies of time and change. Trying to do what is right involves making choices under circumstances of flux. The policymaker must act, as does the hunter following a bird in flight. If the aim is wrong or the prey is not led, the only rewards for the trouble are tail feathers.

Moreover, today's changes are legion and multifaceted and have ramifications in all directions. Government must help us to meet our more pressing problems, some of which can be dealt with only for society as a whole. Government, however, has had its chance since the days of Franklin D. Roosevelt, and if we have learned nothing else from nearly five decades of experience with big government, we know that no sector, whether public or private, has a monopoly on wisdom and justice. Moreover, the warning signs have flashed that a healthy economy atrophies when an overly large segment of wage-earners draws a too-great percentage of income from the taxes of an ever-smaller segment of the producers of goods and services. Volunteerism, which writers from de Tocqueville to Riesman have singled out as unique to the American system, is threatened when powerless men resign themselves to letting John Doe do it, especially when John Doe is in far-off Washington, D.C. Therefore, the future promises a host of ever-shifting and experimental patterns of governmental relations, some highly centralized, but others marked by the type of decentralized efforts which John Gardner and others have advocated. In every field of public endeavor, including diplomacy, innovations are likely. We have tried public diplomacy, bilateral and multilateral negotiations, quiet diplomacy, and shuttle diplomacy; and, depending on the interests at stake, each has its merits and its problems. If we are able to keep personal vanity and pride of authorship in check, we may still discover the most appropriate diplomatic machinery and techniques to meet new challenges and to prevent worldwide self-destruction.

It is obvious that another of the most severe challenges in the years ahead will come in the workings of the economy. If one issue predominated in the 1976 elections, it was that of inflation/unemployment. No branch of the social sciences takes greater pride in the rigor of its methods and the precision of forecasting than economics, yet none was brought up short more dramatically by dominant economic trends. It is "infra dig" among economic scientists to urge that some of the concerns of what once was called political economy deserve reexamination. Econometrics and microtheory have evolved tools of analysis which are far more sophisticated than policy-oriented studies of an earlier day. With the manifold forms of interaction between government and the economy, however, the focus of economics must, at least in part, be addressed once more to the politics of the economy. At the same time, the oil crisis has helped us to see that a national approach to economics is not enough. Large corporations which make use of political consultants are conscious of the need, and it is our best economists who should look beyond national boundaries if they are to achieve their fondest hope of making the study of economics operationally relevant. Some younger economists are manifesting an interest in the economics of education, cities and oil, and while the terminology may offend the more orthodox economists, the need is too pressing to justify the arguments of the purists.

Change is also expressed in demands that more attention be given to the quality of life. In every one of the developing countries, national leaders with whom I have worked have explained that increasing gross national product, though a worthy national goal, was not sufficient. They have been frank to say that they did not wish to run the cycle of industrialization-commercialization-pollution and urban blight which developed countries have followed — although trends in the richer developing countries point that way. Leaders of developing countries are in search of innovative educational structures more appropriate to their needs. They are coming forward with rural development strategies designed to increase the use of intermediate technologies, lifelong learning, indigenous entrepreneurs, and technical/vocational training. The twin goals of the so-called poorer nations are to gear education more directly to community problems closing the gap between work and study, and to define national goals to generate support among the people. The forms and structures through which the poorer countries are working hardly correspond to those of the richer countries, and the best way to earn stripes as an "ugly American" is to judge the social and political life of one's hosts during the first day or two of a visit.

Instead, there is much that Americans can learn from these nations (e.g., regarding education for development); a possible meeting ground is a common heightened awareness that the quality of life deserves greater emphasis. Within the United States, changing work patterns and lifestyles demand reconsideration. The 4-day workweek is becoming increasingly common, and early retirement for various occupations occurs as often in one's fifties as in the sixties. The mechanization of certain work tasks puts lively and energetic people in the position of looking for satisfaction outside their places of major employment. In my youth, leisure time was in short supply for most people; now almost every community has its adult education program, its recreational offerings, and numerous community programs of varying importance. For adults returning to school to complete their education, the community colleges (which Harold Howe II considers the single great twentieth-century educational innovation) are filling an urgent need. Repertory theaters have sprung up in many communities, and local symphonies and dance groups provide a richer cultural life.

Viewing the advanced and developing countries, I find the crucial role that cultural development has come to play. In developing countries, it is the route to national integration. Most of the new nations lack the main requisites of nationalism. They are at best loosely organized collections of tribes brought together by the accident of colonial settlements. For such peoples, culture has a paramount role in national unification; without it they are likely not to know what it means to be a Nigerian or a Tanzanian.

In the developed countries, culture faces a different challenge. Here the identity crisis is less national and more individual. With more people spending more time away from their work, and with work itself (as the late Hannah Arendt wrote) taking on attributes of drudgery and unrewarding labor rather than of the dignity of work, the individual must find meaning outside his job. Here he comes to a fork in the road, a point at which the choice must be made between cultural and civic activities capable of producing continued personal growth and the endless repetition of childhood adventures guaranteeing a permanent state of adolescence.

A related social problem which may be the greatest challenge must be mentioned here. America leads the world in its scandalous treatment of the aging. Driven from their homes, they languish in second-class nursing centers which at their best are an invitation to perpetual loneliness. It is scant consolation that the other developed countries have fallen one by one into similiarly disgraceful patterns. Japan had been a country in which 75 percent of the aged lived with and were revered by their families. The Japanese now house most of their older people in public establishments. Recently, a dying woman who had been a longtime resident in such a paradise left all her earthly belongings to her television set, the only object with which, according to her will, she had had any communication in the last fifteen years of her life.

This leads to the last item on the agenda: our communications network. No one can fault the United States for its technological achievements. Modern television is the most powerful instrument known to man for the instantaneous communication of the nation's business. It is capable of bringing art and education into the living room of the poorest family. Potentially it is the world's greatest educator and human equalizer. Yet for many of our citizens it has become the opiate of the people, a substitute for civic participation. We are drenched in soap operas, schooled in the latest forms of violence, and deprived of the deepest mysteries of the human drama. Television offers the public the lowest common denominator of American life. It claims to provide what the people want. It simplifies and corrupts the nation's most basic dialogues, including the political and international.

This is plain talk and not pleasant to relate. Any balanced treatment would hasten to give credit for those occasional national services that television has rendered, such as its coverage of Watergate, the walk on the moon, and of the war in Vietnam. The challenge posed, however, is that we are capable of doing so much better, not only with communications but with the care of the aged, cultural development, the quality of life, the workings of the economy, and the ordering of political life. It is defeatist to think and act as if improvements lay beyond human will. We need to reorder priorities and to restructure institutions. Profits and power may be essential in society, but so is a renewed sense of service. Rights are a part of the heritage, but so are responsibilities. If self-esteem requires that we think more about the self, then a good society implies a nonneglect of the common good. In rejecting the traditional forms of Western values, we have abandoned what is far more important: their substance.

It there a way out? Is there a way to renew the essence of the heritage? I suggest that the answer lies in a return to moral reasoning. Moral reasoning is the discipline of weighing and considering competing and sometimes conflicting goods. Moral choice involves the ordering of rights that compete with other rights and the limitations which one places on the other. The right of freedom of speech, the Supreme Court says, does not entail the right to cry "Fire!" in a crowded theater. The rights of the majority can never justify extinguishing all rights for the minority. If we could restore this type of thinking in all the manifold areas in which we must respond to change, we might proceed within a coherent framework of thought. We might then see change as a challenge, not as a catastrophe.

No one can forecast with assurance the directions which history will take in the next quarter-century. As H.L.A. Fisher argued in a brilliant essay, no task is more uncertain and bewildering: "We know more about the world in which we live and are in a better position to gauge the forces which move it. Our statistics are more complete, our knowledge of the past is fuller. . . ." Fisher then warned, however:

> Although we have gained in precision, the factors to be assessed have increased in number and complexity. In place of the isolated rivalries of the past, we are now faced with struggles in which the whole habitable globe is either directly or indirectly involved. The problems have become so vast, their solution depends on a forecast of so many imponderables and concurrent factors, upon so vast a complexus of doubtful contingencies, that statesmanship . . . has become three parts guesswork.

With all the refinements of methods and technology, we still depend on social imagination, political judgment and human wisdom. Fisher demonstrates in a review of political prophets the greater prescience of a small group of political thinkers, including Burke, Polybius, de Tocqueville, and Seeley. He offers a longer list of those whose historical judgments were far from the mark. If we consider present-day thinkers and rank them as Fisher did, we must note that Lippmann warned of the risks of a land war in Asia, Niebuhr prophesied that the United States would not be accepted or admired everywhere in the Third World, and Morgenthau proclaimed that foreign policy had to reflect the national interest, not a moral crusade. It remains true even in the age of the computer that all human intelligence, as it reaches out to comprehend the future, is not equal. In Fisher's words, "the higher gifts of divination . . . depend upon an insight into the fundamental moral forces of the world." In this sense the poet Wordsworth was superior to statesmen such as Pitt or Napoleon, for he foresaw in the rise of Spain an instrument for thwarting French imperialism, the need to curb the abuses of child labor and other evils of industrialism, the emergence of national compulsory education, and the corruption of the popular press. The goal in these complex human areas is, as the British say, to get it right, and rightness here encompasses both justice and clarity.

I would thus advocate a call for greater openness and sympathy for the thought and writings of the exceptional few whose minds bring us closer to the truth and are more than compilers, conceptualizers or classifiers. These few can be recognized by their words, especially the quality of them more than the quantity. But to know them one must know oneself — the gravity of one's commitments, concerns and questions — and one's resolve to seek the truth. I challenge anyone with deep and abiding concerns and questions on democracy to read de Tocqueville without sensing that here is such a mind. I ask anyone with a commitment to progress to read Carl Becker without a similar enlightenment. One cannot study Hannah Arendt's writing without gaining a new understanding of totalitarianism. You will not find such writers and prophets on the list of bestsellers nor reported — as a rule — prominently in *Publishers Weekly.* It is unlikely that large publishers will have pulled out all the stops of their public relations machinery for these writers — at least while they are alive (I have been told that Carl Becker's books sold an average of 800-1,000 copies). I recently finished a volume called *Interpreters and Critics of the Cold War* — a review of the four or five most penetrating thinkers whose interpretations help me, more than either the official or revisionist historians, to comprehend the Cold War. Several publishers have responded that because two of my chosen interpreters are dead, their work has been superseded.

When it comes to interpreting the future or comprehending any historical period, our only recourse is to the exceptional few publishers notwithstanding. Where we see catastrophe or contradictions, they may bring to light some neglected source of explanation. If change is considered a challenging opportunity, they may help to plan the way to meet it and respond. It remains true that behind every major policy direction, there is, as Keynes so graphically put it, some "oftentimes obscure academic scribbler." Behind understanding, there is often a book. The great challenge is to seek out the interpreters and critics who provide this resource. Unless we find them and ponder their thought, insights, and conclusions, we will probably remain suspended between dreams and despair, between challenge and catastrophe, between resolve and resignation when faced with a dangerous, uncertain, but awesome future. It will not do to condemn the system and fall into a deep and self-righteous sleep, for in Herbert Butterfield's words: "Like our forefathers, we may feel that the world was spoiled before ever we were born. . . . It is pointless for us to blame our predecessors, for they handed down to us a world of patches and compromises, because they too had their desperate moments wondering sometimes whether they could keep the world on its legs at all."

If we are to do more than blame others and condemn our fate, however, we shall need all the accumulated resources both of ancient and modern mankind. Of all professions, your profession can help to point the way to these rich treasure-houses of wisdom and understanding.

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Response

I have two immediate reactions to Thompson's paper. The first is that if, as we Irish say, his sainted mother had not been such a distinguished musician, what a magnificent librarian she would have made! The other is that by simply rereading his paper and substituting the word *librarianship* for *education,* my paper would scarcely be needed at all.

We have a tremendous task ahead of us. The situation of the librarian and the library is very much like that of education. I have said repeatedly that the library is a creature of society, and that it came into being because society needed libraries; and the goals of the library were the goals of society.

But what are the goals of society? Society is floundering in a morass of skepticism, doubt, uncertainty, disbelief. In this environment the library is very much like the university. President Goheen of Princeton once said, apropos of the student activist movement in the late 1960s, that "the students set out to destroy the university, when suddenly they discovered how easy it would be to destroy it, and they pulled back in terror." I think this is true. The library, too, is a very delicate thing, and it would be very easy to destroy it. Yet we need libraries, we must have libraries, we have had libraries ever since the time of Ashurbanipal and even before. Obviously, they fill a need, but the library, I think, is by nature (and I have been criticized for this statement) not a dynamic institution. The reader must seek it out for himself. We cannot force people into the library and make them read. We hold our lamp beside the golden door, and those who seek it out can seek it to their benefit.

Society is not intellectual. Libraries began and had existed almost to the middle of the nineteenth century for the elite, for those whom the sociologists call the "elect." They were needed by the ministers, the lawyers, the teachers, the people for whom books were necessary to their work. There were people like Horace Mann and Henry Barnard, who said the library is a nest to hatch scholars (which it is).

In the 1830s there was a great spontaneous outpouring of enthusiasm for the improvement of the "common man." I think one of the greatest achievements of the library in this country is recorded in numerous autobiographies of second-generation immigrants whose parents fired the enthusiasm for this new land of opportunity and the good things it offered, and admonished their children to go to the New York Public Library and read: "Educate yourself, discover your opportunities." We've lost this enthusiasm somehow, again because of some of the elements that Thompson has cataloged — the breakup of the family, the loss of children's respect for their elders, rejection of the past. But the past must not be rejected. Alex Haley's book *Roots* (about the descendants of an exslave) brings home, I think movingly, the devastating effect upon a people who have no roots, who have been literally torn from their homeland. They do not know anything about their remote backgrounds and ancestors; they do not know who they were. The library is the memory of society in more ways than one; what is past is prologue.

You will recall that the Red Queen told Alice that a memory should work both ways. Alice said that she was afraid her memory did not work in that fashion; she could not remember things before they happened. The Red Queen replied that it must be a very poor memory that works only backward. We must think of history in terms of its meaning for the future.

Thompson has referred to the tremendous advances in communication, and the library has shared in these in a variety of ways. Within the past quarter-century science has "invaded" the library and, largely through the computer and allied technologies, is bringing to the library many changes that promise increasingly efficient operations. I have often said that I wished I were thirty years younger and a great deal smarter so that I might experience the results of all this effort. It may not be long before the library will be a quite different kind of institution from that which all of us have known. Whether it will be a "better" institution is for us and our immediate successors to determine.

In all this change we must not forget that change only for the sake of change is not good; that it is not efficient to do efficiently that which should not be done at all. Abraham Kaplan in one of his essays speaks of the "law of the instrument," by which he means that every invention tends to bring with it the conviction that it is just the machine that is required to do whatever it is that we need done.[1] To say it another way, the instrument creates its own uses. A boy given a hammer immediately concludes that everything needs to be pounded, and an executive who has acquired a copier for the first time comes to the conclusion that all his thoughts must be immortalized in multiple copies. (Indeed, executives have been known to conjure up "immortal thoughts" just so they can be reproduced.) The greatest danger of machine technology in the library, however, is that it can lead to the dehumanization of the library's services. We must take great care that we do not lose a certain rare quality of the "good" librarian epitomized by that perceptive "little old lady in tennis shoes" who, with all her idiosyncracies, knew her materials and knew her clientele.

Several years ago at a conference at the University of Maryland, a tough-minded, very unsentimental professor of economics related that when he was a boy he was a frequent visitor to the town's public library. On one occasion the lady librarian — of the type I have just described — told him that she had some books that she thought would be of interest to him. She added that they were in the adult book collection, but nevertheless she thought that he was "ready for them." He concluded his story with an emphasis on the influence that her statement that he was ready for adult books had on his morale and self-confidence. I would not deny that the little-old-lady librarian is inefficient by modern standards of administrative management, but in losing her we are losing something of the same quality that the medical profession is losing with the disappearance of the family doctor. Perhaps a machine can be devised which will tell little boys when they are ready for the adult books, but at best this appears to be unlikely.

I have no desire to use science as a whipping-boy; the other disciplines have their own shortcomings and excesses. I have emphasized science, however, because for so many centuries the humanities were the "highway" to librarianship, and librarians were so steeped in the humanistic tradition, that there is now some danger of their being misled by the glamor of science *qua* science. I do not want machines to be in the saddle and to ride librarianship; I do not want librarians to be lured by the bright light of the "instrument." I yield to no one in my enthusiasm for what the machine, properly understood and controlled, can do for the improvement of library service; indeed I have myself played some part in the "scientific revolution" that has come to the library — but I want the machine's limitations, as well as its benefactions, to be thoroughly understood.

The library must operate on two levels: with science as it relates to its own operations, and with science as it relates to the society the library serves. The library as a creature of society has been influenced by science in ways other than the alteration of its technical processes and procedures. Science has been, in large part, responsible for the population problems created by a continually rising birthrate and, at the other end of the spectrum, a greater life expectancy. The physical sciences have become sorcerer's apprentices, gobbling up our finite natural resources at an ever-increasing rate and presenting us with problems such as the conservation of energy, the preservation of our natural resources, the control of pollutants in our environment, the cult of bigness for its own sake, and our confrontation with a transportation system adapted almost solely to the automobile. The list could go on and on. We are besieged on all sides by the problems of living in a society where change is rapid beyond any previous experience.

The problems are mountain high; they reach to the sky. I can remember sitting in the college library one snowy afternoon as an undergraduate, reading Edward A. Ross's *Introduction to Sociology,* and particularly the concluding sentence of one of his chapters in which he said: "Humanity has a perilous knife-edge to travel and humanity may fail." I still remember the shudder that went through me at that time, and the thought still makes me shudder.

I see it as the responsibility of the library to make available, in a variety of ways, resources which will enable people to form educated decisions about how they collectively should try to solve these modern-day problems. The solution will take a lot of good people who have the courage and the perceptiveness to take a critical look at what passes for progress these days.

Libraries cannot fulfill this responsibility alone, even though they may benefit by having at their disposal the most modern of technological systems. Libraries must have super-librarians who have a social awareness, if not a "social conscience." This brings us to a consideration of the qualities which must be developed and encouraged in the training of good librarians.

Throughout my career in library education, I have pondered the questions of the characteristics of the "good" librarian, and of which of these characteristics can best be learned in the classroom environment. I believe there are four elements: (1) a sound general, or liberal, education; (2) substantive knowledge, expressed as the mastery of a subject field; (3) the ability to communicate that knoweldge to others; and (4) a sense of humor. Let us look briefly at each of these qualities.

Of all professionals, the librarian most needs a good general education in order to be aware of the multiplicity of forces and concerns that comprise the complex society that he or she will serve. Indeed, a liberal education is important to free people everywhere, but it is especially important to the librarian, who must be familiar with the currents and crosscurrents that shape and reshape the culture.

The second element, substantive knowledge, is exemplified as a mastery of a specific subject field or cluster of closely related fields. A field, its bibliography, its technical vocabulary, its landmark works, the problems it attacks, and its current trends should all be mastered by the librarian. The field chosen must be a recognized academic discipline. This is the area that has been most neglected by library education, and that has been sacrificed to make room for an ever-expanding body of library technology. The "good" librarian should have at least a master's degree in a subject field, and the academic librarian should have a doctorate. The current dual-master's program at Case Western Reserve's School of Library Science is a step in the right direction — but only a step. Since the early 1950s the school has had such a program at the doctorate level, but at the master's level there is some danger that both the substantive field and librarianship are getting shortchanged. Some shrinkage in library technology can be tolerated and even beneficial, but the subject courses are basic and need all the attention that a full master's curriculum makes possible.

Third is communication, for all the knowledge in the world is valueless if it cannot be communicated to others. The librarian is, or should be, no Fafner guarding jealously the golden hoard that is his bibliographic collection. As part of the communication process, librarianship should make its practitioners competent in communication itself, and this is done largely through a mastery of the subject specialization. We must learn to meet our respective clienteles on their own levels; this requires a flexibility that few in the profession now seem to possess.

Finally, there is a sense of humor. Some of my friends tell me that this is the most important of all. I do not agree, but it is important. A sense of humor — which really is a sense of proportion, a sense of values — cannot be taught in the classroom, but an atmosphere can be created that encourages its development. "I hasten to laugh at everything," said Figaro in Beaumarchais' *Barber of Seville,* "for fear of being compelled to weep over it." Christopher Morley wrote that it is all very well to have a crown of thorns, and indeed, every sensitive person carries one in secret; but the times when it should be displayed to public view are very few, and even then it should be worn cocked over one ear. Librarians have their own professional crowns of thorns, but they should be kept discreetly from public gaze.

There are doubtless those librarians who will argue that the financial rewards being what they are, no librarian can afford the kind of professional education I have suggested here. I think that this logic places the cart before the horse, and that librarians prepared as I have proposed would experience, even in today's market, little difficulty in securing appropriate remuneration. We cannot ignore the fact that we are not attracting to the field of librarianship young men and women in sufficiently large numbers who have the potential to become the kind of "good" librarians that I have described. Inadequate financial reward is only a partial explanation; even more important is the absence of intellectual challenge that librarianship seems to present. This failure is clearly the fault of the library schools. Our accrediting procedures have thrown open the floodgates to mediocrity. We have continued to accredit schools not because of excellence, but because they are no worse than schools already enjoying accreditation. The standards in and of themselves are reasonably adequate, but it is their enforcement that is lax. We do not know the optimum number of schools that are needed, but we go blindly forward accrediting more and more, without regard to the market for their graduates.

Despite the proliferation of library schools and the pretended dedication to research, we are still plagued by a multitude of unanswered questions. For example, we continue to admire the growth of circulation, particularly the growth in circulation of nonfiction, without understanding the artificiality of the distinction in terms of social values or utility. We continue to dedicate ourselves to the growth of the book collections over which we preside on the assumption that "bigger is better," without regard to the optimum size of a library for any given clientele. I remember well from personal experience how much easier it was to use the unusually well-selected collection of my undergraduate library than the millions of books stacked in the Library of Congress. With all the new instrumentalities for communication (such as electronic networks) that science has given us, this race for bigness has lost what little rationale it may once have had. Finally, the fear of censorship still haunts us, despite the fact that publishing innovations have put inexpensive "trash" within the financial reach of all who want to read it. While subscribing to the belief that the librarian is an educator, we have not stopped to define what that role implies with respect to acquisition policies.

I think that librarians are the last to realize the power of the library. The public that the library serves may be numerically small in terms of the total population, but that public is far more important in the making of social policy and the betterment of society than its numbers suggest. I think it is good that the library is an "elitist" institution, for it is the "elite" who make public policy.

Today's college students present a strange spectrum of competence and motivation. At one extreme, they are the most brilliant and intellectually developed young men and women we have ever had, as the science fairs sponsored by the National Science Foundation testify. At the other extreme, droves of students attend college because "it is the thing to do," because it brings prestige; they are lazy, indifferent, untouched by intellectual curiosity. Between these two extremes stands the middle group, which in an earlier era would be known as "gentlemen scholars" and which now seems to be shrinking. As library educators we must look to the talented for recruits, but we are getting recruits from the vanishing middle group in larger quantities than will have job opportunities. We have not employed the right intellectual appeals or given the student an intellectually challenging program of study.

We must not sell ourselves short with an inadequate educational program. We must believe in ourselves and the importance of what we are doing. We must stop arguing from poverty. Librarianship is what we make it, and recognition of that fact is the first essential step toward making it what it should be. Roy Jenkins, head of the European Commission, although speaking in a different context from that which concerns us here, has nevertheless made some observations that are relevant to the task that confronts the library profession. Speaking before the representatives of the 9-nation European community, he said:

> If our community cannot be made to work, what can? If we among the richest and certainly among the most favored and talented of the populations of the globe, cannot learn to work together, what prospect is there for humanity, or for a decent, civilized life for ordinary men and women? These are the stakes and these are the issues. Let us approach

> them with an awesome sense of responsibility, but also with a courageous and determined optimism.

At the dedication of the new library of York University in Toronto, Archibald MacLeish told his audience:

> The library, almost alone of the great monuments of civilization, stands taller now than it ever did before. The city — our American city at least — decays. The nation loses its grandeur, becomes what we call "a power," a Pentagon, a store of missiles. The university is no longer always certain what it is. But the library remains: a silent and enduring affirmation that the great Reports still speak, and not alone but somehow all together — that, whatever else is chance and accident, the human mind, that mystery, still seems to mean.[2]

Thus I am brought back to Thompson's analysis and the perilous knife-edge of E. A. Ross. There is an ominous note of the inevitable in Hamlet's prophetic warning:

If it be now, 'tis not to come;
If it be not to come, it will be now;
If it be not now, yet it will come;
The readiness is all.

Those of you who have specialized in library service to young people are undoubtedly familiar with Rosemary Sutcliff's magnificent series of historical novels, and particularly *The Lantern Bearers,* which treats of the devastation in Britain after the departure of the Roman legions and at the time of the coming of the barbaric hoards. You may recall that at the end of the book, Aquila, who sees despair closing in around him, wonders "if they remember us at all, these people on the other side of the darkness," and observes:

> I sometimes think we stand at sunset. The darkness will close over us in the end. But I believe the morning will come again. The morning always grows again out of the darkness, but maybe not for those people who saw the sun go down. We are the Lantern Bearers, my friend; for us to keep something burning, to carry what light we can forward into the darkness and the wind.[3]

"To keep something burning, to carry the light . . . forward into the darkness and the wind" — that is the apotheosis of librarianship, that is what librarianship is. It was not electronics that prompted MacLeish to say that "the library, almost alone of the great monuments of civilization, stands taller now than it ever did before."[4] The time may well come when we must be the lantern bearers shielding, like the monastic librarians of the Middle Ages, the flickering lamp of learning from the winds of a barbaric storm. The library, either with or without the benefit of technology, must carry the light as best it can and proclaim itself a storage place for the memory of the human race. The library just might make the difference between an uninhabitable planet and a world that holds the possibility of the continued existence of humanity; "the readiness is all."

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The Future of Government: Trends and Emerging Conditions

"Ten years ago government was widely viewed as an instrument to solve problems; today government is widely viewed as the problem," noted an influential review of the future options for the federal budget by the Brookings Institution. Former McGovern campaign manager Colorado Senator Gary Hart puts the problem of big government back to the people: "You can't get the Federal Government off your back until you get your hand out of its pocket." California Governor Jerry Brown says that you can't understand his budget-cutting administration unless you understand the message of E. F. Schumacher's book *Small is Beautiful.* Finally, Jimmy Carter told the Democratic convention in his acceptance speech that: "I have spoken a lot of times this year about love. But love must be aggressively translated into simple justice."

What might happen to government in the next ten to twenty-five years?

I will review two approaches to the future and the trends they suggest, and three conditions which could affect the direction of those trends and their impact on the government. My approach will be to examine two views of the future, one from the perspective of the federal budget, the other from the images provided by an overview of major futurist works. Both approaches raise questions about how the agenda of the government will be shaped. The following sections review: (1) activities to place on the institutional agenda the discussion of a shift in our societal paradigm and its implications for policy, (2) the growing interest within government for a more systematic consideration of the future, and (3) trends in citizen participation.

The images of the future I selected were supplemented by the small but growing body of literature on the future of the government.[1] Most textbooks on government or some aspect thereof end with a consideration of what the future holds.[2] Other important sources are the various statements of important trends, such as that included in Appendix A wherein Joseph Coates, a leader in the technology assessment movement, gives sixty long-term trends which he suggests will form the basis for the future.

The topic at hand is obviously a broad one. In this paper, however, I will focus on some selected emerging trends and conditions which I think are likely to affect what the government will do and how it will do it.

VIEWS OF THE FUTURE FROM THE FEDERAL BUDGET

Most cities and states have some growth and development policy, some land use or comprehensive plan; most national governments do as well. The United States is one of the few nations in the world which does not have a growth and development policy to guide its future directions. It is also a nation where policies are frequently made in relative isolation from each other. In the absence of mechanisms to set coordinated policy, the major mechanism which the federal government has for coordinating national policy and setting national priorities is the federal budget process.

In 1921 Congress gave the president authority to prepare and submit a unified budget. Congress did not then realize how powerful a tool the budget would be for the president, particularly since he also received the power to clear all requests for legislation from his executive branch. Congress, however, was reluctant to give itself a mechanism which involved as much discipline as does the budget. Nevertheless, the constitutional challenge by President Nixon in impounding appropriated funds, as well as a concern (particularly in the Senate) to involve Congress more effectively in setting national priorities, led to the creation in 1974 of a congressional budget process.

The budget process forces the simultaneous consideration of all spending decisions, and presumably of their underlying purposes. This is important for the consideration of the future, because funding decisions often initiate expenditures and programs the effects of which may be felt for several years.

What view of the future is provided by the examination of the federal budget? A major source of information for this is the report *Setting National Priorities,* published annually by the Brookings Institution. This year's volume, which makes projections for the next ten years, gives a picture of the major options viewed from where we are now.[3] This particular publication is also important because it is being used as one of the major background documents for the formulation of the Carter administration's policy.

Trends in the Federal Budget

For the first 140 years of the republic, until the 1930s, federal spending never exceeded 3 percent of the gross national product (GNP), except during wars and their immediate aftermath.[4] Until the 1930s spending for civilian purposes never significantly exceeded 1 percent of the GNP. With the New Deal programs of the 1930s, domestic spending rose to 5 percent of the GNP and remained at that level until the 1950s, with total government spending rising to about 18 percent; in 1970 it had risen to 20.5 percent, and by 1975 to 22.5 percent. This latest figure is affected by the increased federal spending on unemployment and other measures caused by the recession. This growth in the budget shows three major trends:

> First, the total federal budget, adjusted to remove the passing effects of recession, has grown only slightly faster than the national economy over the past twenty years. Second, the stability of the total budget in relation to GNP masks two divergent trends — a continuing fall in the relative size of defense spending and a steady rise in the relative size of domestic spending. Third, a major part of the growth in domestic spending has arisen from legislation creating new programs or expanding the scope and coverage of old ones, with no liberalizing new legislation, the growth of spending would have been much smaller.[5]

Budget projections, however, suggest that these trends cannot continue. In fact, the freedom to begin new programs enjoyed during the 1960s will be severely curtailed: "Without a significant further reduction in the real level of defense spending or an increase in the share of GNP devoted to federal spending, little leeway is left in the next five years to expand domestic programs or to inaugurate large new ones."[6] The Carter administration intends to keep federal spending at 21 percent of the GNP — yet that still means relative scarcity is upon us. The possibility remains of adjusting priorities within the overall budget. National defense and social welfare are particularly instructive in terms of the Brookings study.

National Defense

To provide an adequate defense posture, the authors of the Brookings study call for a new consensus on defense policy. A basic element of that consensus is an end to the decrease in the share of federal spending going to defense. While sketching out areas where savings are possible, they note that: "Other sectors of the defense budget should receive more emphasis. In general, this means that defense spending will have to increase in real terms for at least five years."[7] This projection is based on the fundamental assumption that there will be no nuclear exchange between the major powers. A major condition of the modern world is that it hangs in the balance of terror caused by the existence of nuclear weapons. Although weapons will spread to smaller countries and the possibilities of nuclear terrorism will continue, there is nevertheless little likelihood that the United States and the USSR will become engaged in nuclear war.

There are, however, other plausible events which might seriously affect U.S. involvement and subsequent expenditures:[8]

1. Upheaval in eastern Europe and weakness in western Europe might generate spreading European conflict.
2. A Korean war might confront the United States with a choice between intervention and inaction — possibly resulting in Japan's loss of confidence in the United States.
3. An Arab-Israeli conflict might prompt Soviet intervention that only U.S. action could offset.

Poverty, Equality and Welfare Expenditure

The authors of the section on income security policy also recommend increases in spending in their areas, although not with explicit figures and with more caution than their counterparts writing on defense. They note that the federal government has made substantial progress in the last twenty years toward three of the four objectives of income security policy:

- protection for precipitous losses in economic well being because of unemployment or other involuntary disruptions of work has greatly expanded.
- access to goods and services, such as health care and housing, which society agrees are indispensable, has been substantially improved for the lower income population.
- major reductions in income poverty have occurred. Poverty as conventionally measured has been cut in half — from 22 percent to 12 percent of the population during the last 17 years. Using a broader definition of income which includes in-kind transfers, it is likely that this figure will drop to 5 percent if recovery from the recession proceeds.[9]

The fourth objective of income security policy, narrowing income differentials, has not been effected, however. After some improvement between 1929 and 1949, the distribution of income has remained highly uneven and remarkably constant.

While avoiding the term, the authors of the study argue for a negative income tax system on the grounds that it would allow more efficient pursuit of the first three goals, and the reformed tax and transfer system would also allow for a conscious and more effective redistribution policy.

Libraries are not mentioned explicitly in the Brookings report, but the general implication is: don't expect much.

VIEWS OF THE FUTURE FROM THE FUTURIST LITERATURE

The federal budget provides a hard look at the government, yet the budget is not concerned with the wider view of what might happen in society in the future which could affect the budget. Most futurists are less constrained in their speculations than budget specialists, and they can provide some wider conceptions of trends in society.

Scenarios

One useful review of several major descriptions of the future contained in research reports, nonfiction, and science fiction was prepared for the Environmental Protection Agency by the Stanford Research Institute (SRI). The study, entitled *Alternative Futures for Environmental Policy Planning: 1975-2000,*[10] begins with a standard caveat of futures research — that the study is meant to provide a frame of reference for policy-making rather than policy decisions. The report focuses on four driving elements — energy, values, food, and climate — and builds these into ten scenarios. These scenarios are meant to bound the domain of uncertainty by encompassing the spectrum of plausible future. Appendix B contains a summary of each scenario.

The SRI report notes that the ten scenarios, despite wide-ranging individual variations, represent three basic themes:

> The first theme, industrial success (Scenarios 1, 6, 7), is that of relative success within the limits of the industrial age paradigm. Despite the difficulties experienced, the United States and world societies generally succeed in discovering, organizing, and using human and material

> resources to address political, social, and economic problems and to produce an economically viable and equitable environment that incorporates individual liberty and opportunity for self-fulfillment in some stable relationship with the biosphere. These results are achieved, albeit imperfectly, through the medium of the political, economic and social forms now existing in the developed countries. No major value change nor significant institutional change is experienced, although former values and institutions, of course, evolve and are modified during the experience.[11]

In the prime example of this theme, entitled "Hitting the Jackpot," the optimism of Herman Kahn is vindicated. Science produced the answers, nature was kind; wise corporate business leadership acted responsibly; government stayed out of the way.

> The second theme, industrial failure (Scenarios 2, 5, 8, 9), expresses the relative failure of these same institutions. Resources are either not found or prove inadequate in the face of mounting problems, and the problems themselves are exacerbated. Generally speaking, nations of the world become poorer, less equitable societies that provide less individual liberty and opportunity for self-fulfillment, and that exist in a less stable and decreasingly viable relationship with the natural environment. However, the major institutions and the industrial-age values they incorporate remain dominant. Neither alternative values nor reformed institutions develop. The industrial-age system functions but less efficiently and less happily.[12]

This failure to respond is typified in the scenario entitled "Dark at the Top of the Stairs." Hard times forced people to live with reduced levels of energy consumption. This condition was brought about by the gradual withering of the industrial state and the slow, grudging acceptance of more frugal lifestyles. In the 1990s the climate worsened, forcing energy consumption up and the standard of living even lower. At the end of the century, the free market industrial world was marked by near-exhaustion, economic stasis and pessimism, but also by social peace enforced by authoritarian regimes.

> The third theme, industrial transformation (Scenarios 3, 4, 10), is one in which the industrial-age paradigm, during the course of the next twenty-five years, is drastically changed and, in effect, transcended. The paradigm's potential for further success is outweighed by its inherent limitations. A new paradigm, exemplified by the adoption of so-called "frugal" values, incorporating the Buddhist economic principle of maximum personal satisfaction with minimum consumption or, in culturally more familiar terms, Emerson's ideal of "plain living and high thinking,"

> emerges. Social and economic institutions are developed that are simpler and interdependent and that, reversing current trends, involve more people in self-sustaining activities. Despite the occurrence in some scenarios of considerable trauma during the period of transition, this is a successful theme. Individual satisfactions over all dimensions are generally high, and the new social and economic institutions incorporate the principles of harmony between human activity and the natural environment.[13]

The scenario "Toward the Jeffersonian Ideal," for example, is fostered by a rapid evolution in values leading to a transformed America by the year 2000. A new scarcity compelled people to live more frugally, and the exterior simplicity and interior richness of their lives seemed a very rational and appropriate adjustment to a pressing situation. A visible minority strove for economic self-sufficiency and others for a voice in the management of more traditional economic enterprises. Both groups formed a confident citizenry, skeptical of "experts," and became in every way more resilient and self-reliant.

Transformation of the Industrial Paradigm

The implicit distinctions among these three themes is the degree to which there is a "transformation" in the societal paradigm, or world view, which affects the basic way in which persons perceive, value, think, and act. Another group has defined a paradigm as:

> the general conceptual orientation of a people. . . . A conceptual orientation results in, and is the result of, our noticing and paying attention to some aspects of reality and not to others. The realities we notice, and in the presence of which we live, are, then, a function of the elements of our conceptual orientation — the dominant concepts, metaphors, images, logic and decisions — rules by means of which we experience and handle reality.[14]

What is the industrial world view that may be transformed? The SRI report states that the industrial paradigm has been characterized by the progressive organization and division of labor into standardized tasks, the replacement of men by machines in the performance of those tasks, and the joining of science and technology to further that development. The report notes that the successes of the industrial age have been numerous: a remarkable increase in the material standard of living, better nutrition, prolonged life span, nearly universal education, highly advanced transportation systems, communications media that serve a "global village," etc. Nevertheless:

> These successes have also spawned problems. Health care improvements have caused overpopulation problems, scientific breakthroughs have created weapons of mass destruction, affluence has contributed to environmental pollution, communications technologies are used to invade our privacy, and so on. Practically all serious problems of the industrial age seem to be the result of success — which, in turn, suggests that these problems may not be satisfactorily resolved within the context of the industrial paradigm whose very success creates these problems. An illustration of the "failure of our success" may be found in the fact that the industrial paradigm, premised on the search for abundance, seems to be creating a "new scarcity" of:
>
> — Energy
> — Materials
> — Natural fresh water
> — Arable land
> — Unpolluted living environments.[15]

The values of the industrial paradigm — as characterized in Kahn and Wiener's "long term multi-fold trend" — are rational, individualistic, secular, materialistic, mechanistic, and scientistic.[16] The values leading to the paradigm shift (those inherent in the "frugal sector" of the population), which will lead to the transformed or postindustrial paradigm, are:

> a blending of rational and intuitive, a desire to voluntarily simplify the external aspects of life in order to secure a greater internal/inner life, enhanced cooperation/participation, a more holistic/systemic perspective expanding to future generations, and a Taoist sense of ecology extending beyond concern for only the physical environment to include the psychic environment as well.[17]

A comparison of the views on future technological and economic growth implicit in the transformed and extended industrial paradigm is given in the SRI report.[18] In Kenneth Thompson's paper the issue of shifting values was raised. The shift in the societal paradigm may be the major cause of what we are currently experiencing.

AGENDA SETTING

"It is imprudent to derive a political prediction from a social vision alone."[19]

While social and economic trends can lead to some accurate forecasts, predictions of political actions are more difficult, because of the organizational structures and processes in government and because of the human element involved. At any given time, the structure and processes of the government will present a particular menu of issues or choices.[20] Nevertheless, the institutional agenda of the government — those concrete items scheduled for active and serious consideration by the decision-making body — might not correspond to the wider systemic agenda of society. The systemic agenda includes those political controversies that are viewed as falling within the range of legitimate concerns meriting the attention of the active population.[21]

The transfer of ideas in good currency (such as those involved with "frugal values") to issues on the institutional agendas of Congress or the executive branch is a complex process. Some aspects of this process make it difficult for new issues to be considered.

1. There is only a limited number of issues which can be dealt with; in Congress, for example, only about one-tenth of the proposals introduced are ever seriously considered by committees.[22]
2. Of this limited number of issues, a certain percentage is composed of older issues which are topics of constant consideration or are periodically reevaluated. The relative scarcity reflected in future budget decisions is likely to contribute to a more crowded agenda by encouraging a closer look at programs already in existence to determine their effectiveness. This is the basic idea behind the movement in Congress to establish the "sunset" concept — whereby a program is terminated after a certain time period unless positively recreated.[23]
3. Decision-makers themselves play an important part in setting the institutional agenda. Ideas and the programs in which they become embodied need legislative "champions" or entrepreneurs. The necessary resources and incentives for becoming an effective issue entrepreneur are not distributed equally among all members of Congress or the executive branch; thus, a smaller number of key leaders have a disproportionate ability to set the institutional agenda.

A certain time delay is usually required for a change in the systemic agenda to be reflected in the institutional agenda, and this lag will be greater in periods of severe system discontinuities, e.g., during depression, war and technological change. Experts on the agenda-building process have pointed out that "the viability of a policy is a direct function of its ability to cope with the problem of lag between the two types of agendas and to keep the magnitude of the lag within tolerable limits."[24]

What are some of the forces acting on the link between these two agendas? Several emerging conditions should be noted, because their impact on this agenda-setting process could prove to be very important to the future of government. First is the emergence of a variety of groups which could broadly be interpreted as transferring values of the "frugal sector" into demands for public policy. The second condition deals with a growing concern within the government, particularly Congress, for a more systematic consideration of the future impact of its current policy-making. A third and divergent set of conditions will deal with citizen participation.

PUTTING THE EMERGING PARADIGM ON THE INSTITUTIONAL AGENDA

One of the forces shaping the future of government is a myriad of groups disseminating aspects of what I've called "frugal values." Several groups work on putting these issues on the institutional agendas of various levels of government. These groups have diverse backgrounds, operating styles and degrees of permanence. Their origins have been affected by several forces, including the public interest advocacy of Ralph Nader, the *Whole Earth Catalog* and related publications, and the environmental movement. Some of the issues that these groups deal with include a concern for a simple lifestyle, limiting or redirecting growth, encouraging intermediate or appropriate technology, economic populism, and the paradigm shift itself.[25] In addition to these change-oriented groups, there are counterpart groups beginning to use similar tactics to encourage current industrial values.

Simple Lifestyle

In the United States a simple lifestyle is not necessarily a simple matter. There is a variety of technical and scientific questions which are useful for enhancing the quality of life with a lower standard of material goods. A very important group in providing analysis and specific alternatives for a simpler lifestyle is the Center for Science in the Public Interest. A spinoff from Ralph Nader's organization, this band of scientists and others has produced a variety of popular descriptions of the possibilities for a simpler and higher-quality life, e.g., a nutrition scoreboard to rate foods, lifestyle and energy indices to rate appliances, and *The Contrasumers: A Citizen's Guide to Resource Conservation.*[26]

Another group, Alternatives (part of the Interaction Coalition), has put together *The Alternative Christmas Catalogue*. Believing that both celebration and giving are important parts of life, they feel that "giving has gotten out of hand" in our society. In a real sense, "give until it hurts" best describes our current practices:

Materialism, pollution, the rate of depletion of the Earth's resources, and the continuation of colonialism are the fruits of our celebration process. The alternatives of celebrating simply, making gifts, buying from self-help craft groups, diverting money to people- and Earth-oriented projects, represent a new philosophy of giving. This is what *The Alternative Christmas Catalogue* is all about.[27]

Redirecting Growth

A Center for Growth Alternatives, premised on the notion that "we can't grow on like this," was established to examine the various approaches and implications of low-growth and no-growth strategies.[28] Their newsletter considers various legislative proposals and also gives specific examples from around the country of good and bad examples of growth. An example of the latter is the Tennessee-Tombigbee Waterway project, "the most massive earth-moving job in this hemisphere since the Panama Canal," whose price tag ($1.36 billion) and likely adverse environmental impact have aroused local opposition.

In the middle of the no-growth controversy is the question of employment, particularly for the poor. Environmentalists for Full Employment (EFE) is a group established to confront that question.[29] One major legislative question which EFE faced was the Humphrey-Hawkins proposal for full employment discussed below.

Intermediate Technology

E.F. Schumacher's book *Small is Beautiful* has created great interest in more appropriate forms of technology. An important function of groups interested in intermediate technology is to maintain an ongoing network of people committed to similar objectives. Therefore, some newsletters often devote much space to what various groups around the country are doing to further the cause. One such operation is *Rain — The Journal of Appropriate Technology*. The attitude expressive of the evolving paradigm mentioned above is shown in the journal's introduction to an annotated bibliography on architecture entitled "Spirit and Space":

> It often seems that spiritual concerns are something foreign and far-removed from the pressures of every day life — and they usually have been in our culture. Yet the whole purpose of all our frenzied activity is to somehow make us happier. And the most important thing about getting happier is *feelings* — about ourselves, toward others, about our

> world. Funniest thing, once we remember why we're doing things — good feelings and feeling good — we suddenly realize that reverence and respect and love in how we do things are more important than frenzy and quantity. More and more, that is happening in how people are making the places where they live.[30]

The same issue of *Rain* also discusses the potential development of a National Center for Appropriate Technology by the federal government as part of the 1976 Community Services Administration authorization. This would fund appropriate technology researchers to work with community action programs on projects with direct impact on the poor.

Another group with an assertive approach to appropriate technology is the Institute of Local Self-Reliance. It sees itself as working toward "the goal of creating a new value system and a new distribution of economic and political power." To help accomplish this, the group produces the newsletter *Self-Reliance* "to give this movement a voice, both to report on practice and to weave a theory of localism which strikes at the root of questions of power, of efficiency and of responsiveness."[31] Articles treat issues such as "the battle for municipal garbage" and the land trust concept for community ownership.

Economic Populism

The hard times of recent years and the likelihood of their continuing have hurt the lower and middle classes most of all. When people realize this situation and begin to value the limiting or controlling of urban or national growth, they become more concerned with the mechanisms for distributing wealth within the diminishing pie. This concern has resulted in a wave of economic populism, including much attention to the distribution of wealth within the United States by the federal government. This was ended in the 1940s with the advent of war.

A group whose agenda includes economic populism is the Conference on Alternative State and Local Public Policies. This coalition of progressive and radical politicians and activists has annual meetings and produces a series on alternative legislation. While one of their authors notes that "it seems certain that economic issues and questions of public control over capital will be a major part of an alternative politics agenda for some time to come," he admits that it receives only a small amount of attention among politicians, and that the conference group will have to expand its membership, particularly to include more minority and large city politicians.[32]

The People's Bicentennial Commission, described by Edward P. Morgan of ABC news as "a small but impressive band of patriots, blessed with what appears to be a mix of seriousness and good humor," has developed a program for economic democracy and has used opinion surveys to show that there is widespread popular support for several measures, such as citizens on corporation boards.[33] The Exploratory Project on Economic Alternatives is also examining in great detail some of the major possibilities in the area of economic populism.[34]

Another major agenda-setting effort in the area of economic populism has resulted from the work of Ralph Nader and his associates on the question of federal chartering of corporations. The Senate Commerce Committee held hearings in 1976 on the related issues of the rights and responsibilities of corporations. Nader's Public Citizen group expects federal chartering to be one of their major issues during the next few years.[35]

Discussing the Paradigm Shift Itself

Given the fact that the "paradigm shift" or transformation is an "idea in good currency," and considering the multitude of activities of the above groups and others, it is not surprising that the efforts of some groups are directed toward the paradigm shift itself.

Earthrise, a small but influential group among futurists who might be sensitive to the paradigm shift, publishes a newsletter on developments in the futurist area. Their issues have increasingly been concerned with the questions of images of the future and the search for a new paradigm, and Earthrise has developed a series of presentations describing the various aspects of alternative paradigms.[36]

The Lindisfarne Association, founded by historian William I. Thompson in Southampton, New York, studies paradigm shifts toward what is seen as emerging planetary awareness. Thompson describes this planetary culture as a: "Pythagorean synthesis of science, religion, and art; it is spiritual ecstasy *and* political economy, pre-industrial magic *and* post-industrial technology, myth *and* history. In short, planetary culture is an embodiment of transcendence."[37]

The Princeton Center for Alternative Futures has also been concerned with the new paradigm.[38] Hazel Henderson, codirector of the center, will debate Barbara Hubbard, another woman futurist with the Committee for the Future, in June 1977 about the paradigm shift. The debate is part of the activities of the Congressional Clearinghouse on the Future described below.

What is the likely impact of these groups on the future of government? That impact will depend on several factors, including the increase in the number of people who adopt "frugal values" in the coming years; the extent to which shortages and scarcity are felt; the degree to which these groups and their constituencies gain political power; and the degree of competition or cooperation on the part of more established sectors of society, particularly the business community.

One indication that the public interest groups — particularly in the environmental area and those aimed at limiting growth — have had some impact is the response by business leaders in establishing regional public interest law centers. The purpose of these groups is to counterbalance what they view as the disproportionately large impact that vocal "minority" leaders, such as defenders of the environment, have had on public policy decisions. In California the Pacific Legal Foundation was founded in 1973 on the belief that the interests of significant segments of the public in economic development, highway and dam construction, and more rapid use of natural resources are not adequately represented. Therefore, it has been fighting to permit more intense construction development, greater timber harvesting and grazing on public lands, and broader use of certain pesticides.[39] In addition, the U.S. Chamber of Commerce has established a new lobbying organization called Citizen's Choice to foster economic conservatism. This group is calling for cost-benefit statements before new agency regulations can go into effect, prohibition of public employee strikes, and the restriction of food stamp distribution to families at or below the poverty level.[40]

Libraries can play an important role in networking this information. Networking has become a common professional term among librarians as well as among many of these groups. In fact, Byron Kennard, chairman of the National Council for the Public Assessment of Technology,[41] has proposed that local libraries become the focus for a more active means for networking. Local groups often have time, energy and innovative ideas, but lack funds to communicate effectively with their counterparts or other resource persons. Kennard suggests that the federal government provide communities with toll-free WATS lines. These would be installed in local libraries and be made available to legitimate community groups, thus providing a significant increase in their ability to network information easily.

TOWARD A GREATER CONSCIOUSNESS OF THE FUTURE IN THE GOVERNMENT

Another condition which might have an important effect on the future of the government, particularly on how the government provides conscious and coherent direction to the nation, is the increasing concern for the future from various sectors within the government. This has been manifested by hearings on the future, by a concern with the operations of Congress itself, by the creation of a futures network within Congress, by legislative proposals, and by the creation of a federal advisory committee to examine the overall mechanisms for coordinating policy.

Hearings on the future have become more frequent during the 94th Congress. For example, Senator John Culver held hearings within the Public Works Committee on "Choosing Our Environment: Can We Anticipate the Future?" Culver, one of the leaders in an active group of futurist members of Congress, has obtained testimony from several of the best-known futurists, such as Alvin Toffler and Robert Theobald.[42] Senator John Glenn has generated much attention for his symposium for the Government Operations Committee on "Our Third Century."[43] Senator Hubert Humphrey sponsored both hearings and a major study project on the future of U.S. economic growth, which included spokesmen from both the present (or postindustrial) and the transformed industrial perspectives.[44]

On the House side, Congressmen George Brown and Robert Leggett have held hearings on "Long Range Planning in the Federal Government."[45] These are an outgrowth of an earlier series of hearings by Congressman John Dingell on "Growth and Its Implications for the Future."[46]

There also has been increasing attention paid to the internal policymaking processes by which Congress consciously or unconsciously directs the future.[47] One significant indicator of this interest is the creation of the Office of Technology Assessment. Realizing that the secondary or unintended effects of a technology are often more important than its original purpose, Congress created this office to consider in depth the consequences of selected actions before they are taken. A Futures Research Group has also been created within the Congressional Research Service.

A major statement of this concern by congressmen themselves is the "foresight provision" of the House Rules. In 1974 the House of Representatives gave each of its authorizing committees an explicit foresight responsibility: to monitor trends, events, and conditions and to perform futures research and forecasting in their policy areas. Thus, added to committee oversight (looking backward to see how effective programs are to implement) was the responsibility to look ahead more systematically. The response to the foresight provision has been a slow but steady increase in the number of committees complying with its intention.[48] This concern for foresight also exists in the Senate. Both the Commission on the Operation of the Senate and the Senate Select Committee on Committees are considering how to improve this aspect of the Senate's operations.

On an informal but very important level is the establishment of the Congressional Clearinghouse on the Future. Founded by Congressman

Charles Rose and directed by Anne Cheatham, the clearinghouse now provides more than 500 members of Congress with information on futurist developments of interest on and off Capitol Hill. The goals of the clearinghouse are "focused on the need for Congress to look forward at the consequences of decisions made today, to involve citizens in the processes of government, and to realize the importance of foresight hearings" for committees.[49] As mentioned earlier, the divergent approaches within the futurist movement to the industrial and transformed paradigms will be aired in a June 1977 discussion sponsored by the clearinghouse between Hazel Henderson of the Princeton Center for Alternative Futures and Barbara Hubbard of the Committee for the Future.

Working with the clearinghouse is the Committee for Anticipatory Democracy (a group of prominent citizens and futurists), which was founded by Alvin Toffler to encourage more foresight in government and effective citizen involvement. In September 1975 the committee sponsored the first legislative seminar on futurism for Congress, entitled "Outsmarting Crises: Futures Thinking in Congress."[50]

In addition to this information sharing, several bills which would affect the government's consideration of the future have been introduced. Two of these would move the federal government toward national planning. The first, the Humphrey-Javits planning proposal, S.1795, would establish a system for setting economic goals. The second, the Humphrey-Hawkins full employment bill, S.50, would have a similar effect, although it is focused on the particular goal of full employment. The 1976 election, coupled with the high rate of unemployment, resulted in much heated discussion of the merits of the Humphrey-Hawkins proposal. In terms of the paradigm shift discussion, the full employment bill is an industrial paradigm attempt to ensure an adequate income to the poor through guaranteed employment. Even some traditional domestic liberal analysts such as Charles Schultze, however, have pointed out that in its current form, the bill would force the government into undesirable inflationary spending. Environmentalists for Full Employment, one of the groups mentioned above, supported the concept of the Humphrey-Hawkins bill but criticized it for lack of consideration of alternative plans for full employment, particularly those which would include less capital-intensive and less energy-intensive projects, e.g., decentralized energy production from renewable resources, environmental monitoring and cleanup, public transportation, recycling, and solar heating and cooling.[51]

Another source of proposals for restructuring the way the federal government makes national policy will be provided by the Advisory Committee on National Growth Policy Processes, a group created by Congress to suggest mechanisms by which the nation could consciously set national growth and development policy. The committee will make recommendations for improvements in the executive branch and in Congress, and will probably recommend the creation of a National Growth Policy Commission to monitor the direction of the major trends in the country and to make recommendations regarding coordinated national policy.[52]

How are these developments likely to shape the future of the government? Given the perceived interest of President Carter in planning and in more coherent policy-making, it is likely that he will lend his support to some improvements. His positions, as well as the degree to which the various approaches to national planning and national growth policy will be merged and coalitions formed, are uncertain, however. In Congress, the degree to which the mechanisms — and more importantly the political leadership — develop to facilitate more coordinated policy-making is yet to be determined. The budget process has moved Congress toward more coordinated policy and is likely to continue as a growing force in congressional policy-making.[53]

ANTICIPATORY DEMOCRACY AND UNVOTE: DIVERGENT TRENDS IN CITIZEN PARTICIPATION

What is the future of the citizen's relation to the government and its direction? In this area there are divergent trends, including one toward lower turnout rates at elections, and the other toward increased citizen involvement in defining long-range goals for city and state governments.

The major recent work on American voting behavior contradicted the findings of its predecessor. In 1960 *The American Voter* left the impression that party identification was one of the dominant features of the American political landscape.[54] After the elections in the 1960s and in 1972, however, the authors of *The Changing American Voter* claimed that "it is clear that the party-based electoral system of the late Eisenhower years is no longer with us"; but, they hasten to add, "it is less clear what will replace it."[55]

One of the problems with the "changing American voters" is that they are, to a certain extent, a declining breed. One of the directions for change is no voting at all. On November 2, 1976, some 53 percent of the eligible voters turned out to give Jimmy Carter a slim 51-48 percent popular vote margin. This turnout followed widespread publicity predicting a close election, yet 47 percent of the eligible voters did not take part.

What do we know about these nonvoters? A study of some 1,500 nonvoters surveyed in July 1976 showed them to be distrustful of and disaffected from the major political and economic institutions, political leadership, and the media.[56] Those surveyed most frequently agreed with the following reasons for their nonvoting:

1. Candidates say one thing and do another;
2. It doesn't seem to make any difference who is elected because things never seem to work out right;
3. Watergate proved that elected officials are only out for themselves;
4. All candidates seem pretty much the same.

Those interviewed also agreed, by an 11-1 margin, that "what the country needs most, more than laws and political programs, is a few courageous, tireless, devoted leaders in whom the people can put their faith."

In an interview on the subject, Bill Moyers felt that the American public is terribly bored by the American political process as it has come to run: "People need to be excited once again by politics and the ordinary run of it seems to turn more and more people off to any personal involvement. Americans are among the most unentertained society in the history of man because all of their entertainment is so artificial and contrived — and so is conventional politics."[57] One response to this nonvoting is to make it a positive virtue. The authors of *Unvote for a New America,* for example, argue that the government has broken its contract with the people and therefore the people should not vote; instead, they should prepare for the coming constitutional revolution.[58]

While voters are sitting elections out, citizens in various cities have become involved in defining the future goals and policies of their governments. These people realize the meaning of "anticipatory democracy," the treatment Alvin Toffler prescribed for "future shock." Some twenty cities and states have had some exercise of this type. These activities (e.g., Hawaii 2000, Alternatives for Washington, Goals for Georgia) take a variety of forms, but they all involve statements about the likely and desirable future that can be developed through citizen participation.[59] Alternatives for Washington, for example, was initiated by Governor Daniel Evans so that the future of the state would not be "imposed . . . by the personal interests of an elite nor the impersonal force of history"; rather, it should "be determined by all of the people of the state if they are willing to take time and devote the effort to the task."[60] Initially, a task force of 150 met to consider directions and to identify the range of desirable alternatives; 2,400 additional citizens then took part in a Delphi survey of trends and developments. Approximately 2,000 other citizens met at ten locations around the state to discuss the goals, policies and options for alternative futures. Finally, the general public was allowed to vote for their preferred future through the use of ballots in Sunday newspapers which had been explained on statewide television broadcasts. The governor deescribed the response as clearly indicating "a preference for a future Washington emphasizing agricultural development and the protection and utilization of our unique land base." A report on the project noted the discontent among citizens with their involvement in the normal policy-making channels and the frustration of the state's politicians over nonvoting. According to the report, while Washington's future looks promising, its citizens are nonetheless worried about the pace of change and are:

> unsure of their ability to sustain the quality of life of the State. They have expressed through the Alternatives program a vision of what they want their life to be, and they have begun to translate this vision into proposals for the resolution of current issues and the design of concrete measures to move the State toward chosen goals.[41]

Earlier, I mentioned the importance of the institutional agenda. Citizens groups such as those described may provide an important source of input from the average citizen and allow earlier perception of issues raised by a shifting societal paradigm and thus translation of issues into policy options. In terms of democratic participation, this may be more important than electoral participation.[42]

TRANSFORMATION, PLANNING AND THE CONSTITUTION

One of the implications from the foregoing discussion is that the U.S. government will move toward a consciously set national growth policy, or national planning. Among members of Congress, President Carter, and even segments of the business community, there is mounting interest in planning reforms. Such reform would affect not only the nature of federal policy but would extend to the agenda-setting process.

Other factors will affect the shape of future national planning efforts. These include: (1) the attitude and style of political leaders, (2) the role of public interest groups (particularly those concerned with frugal values and the paradigm shift), (3) the increasingly future-oriented frame of mind of the general public, and (4) the degree to which equality in society is accepted as a goal.

The first factor, the attitude and style of politicians, could certainly influence future efforts. An innovative policy-planning process is one of the policy conclusions from the SRI study of alternative futures. It states:

> The plausibility of great social change, coupled with uncertainty as to the exact timing, nature, and dimensions of that change, suggests the

> need for an innovative policy-planning process that would acknowledge uncertainty, embrace error, engage in goal-setting, foster first-hand experience in futures exploration, and engage in boundary-spanning thinking.[63]

From a more staid foundation in the federal budget, Schultze and Owen also call in the Brookings report for frankness in policy-making. The need to develop more complex alternatives will require that "government leaders also display more candor in defining the hard and complex choices that lie ahead — eschewing either easy retreats or the exaggerated promises that incur growing public mistrust."[64] If there is to be more effective policy-making, political leaders must adopt a higher standard of advocacy. The second important factor is the activity of groups to translate the requirements of frugal values into public policy demands. Acceptance of these values by other parts of the general public will vary according to the degree of scarcity at any given time. Most of these groups focus on their local communities and only secondarily on the federal government. Many of them remain indifferent to discussion of national planning, and some are even opposed. The personal examples they provide and the solutions they develop should not be ignored, however, and these groups may yet explore the relationship between self-reliance and government protection.

Furthermore, there is a need for the general public to anticipate problems before they reach a crisis stage, if difficult choices and determination of growth policy are to be effective. As one Congressman stated: "Forcing the country to meet problems before they reach a crisis stage necessitates a discipline that isn't in the personal or political lives of the people."[65] The anticipatory democracy exercises may play an important role in making citizens aware of the significance of their choices.

Another issue is the degree to which income redistribution is an accepted goal. As noted earlier, there has been virtually no improvement in the inequality of wealth in the United States in the last twenty years. The trickle-down system for the distribution of wealth may have produced a significant lowering of the percentage of people in poverty, but it has not changed the distribution of wealth across income groups.

Most of the work done in the late 1960s and early 1970s contains an optimism about continued growth. The events of the last few years and the current indication for the future hold this optimism in question. In an insightful work on the future of government, Zbigniew Brzezinski viewed the future as a plentiful extension of current resources which would allow the inauguration of a technetronic era. At the same time, Brzezinski realized that an absence of economic growth (specifically, an economic recession) would bring:

> calamitous consequences for the stability of the American social order. Much clearly depends on the expanding economy's capacity to absorb and ameliorate existing tensions. . . . This is particularly true of poverty and race relations, in which even social good will be powerless to accomplish much in the event of a significant economic slow-down.[66]

Is the trickle-down system of distributing benefits of the economic system viable or desirable?

During the scarcity of the depression years, greater equality of wealth was a more accepted goal, and improvements were made. If this scarcity recurs, the types of issues raised by groups such as the Conference of Alternative State and Local Public Policies may be important to the federal government as guidelines for the elaboration of a national growth policy, which includes economic equality as a planning goal.

Another topic relevant to the future of the U.S. government concerns the origin of that government. From 1776 to 1789, structures and processes were designed with a view to the protection and enhancement of certain values. The era was a preindustrial one. The Constitution it produced carried the nation through the Industrial Revolution and onto a road yet untraveled in the history of man. Yet, the period from 1976 to 1989 provides an opportunity to consider again the best structures and processes to protect and enhance life, liberty, and the pursuit of happiness.[67]

In closing, I would like to return to the image used by Shera of the librarian as the lantern bearer carrying what light there is against the wind and into the darkness. The United States may or may not be on the edge of a shift in societal world view. Relative scarcity, however, is likely to be an ongoing fact of life for an America schooled since World War II in increasing abundance. As librarians carry the lantern, I would urge that the light include the lessons from creative and successful responses to scarcity and the problems of justice that accompany it.

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APPENDIX A

LONG-TERM TRENDS FORMING THE BASIS FOR THE FUTURE

General Long-Term Societal Trends

1. Economic prosperity, affluence, and inflation
2. Expanding education throughout society
3. Rise of knowledge industries and a knowledge-dependent society
4. Relative decline in common knowledge of the physical world
5. Urbanization/metropolitanization/suburbanization
6. Rise of the middle-class society
7. Cultural homogenization — the growth of a national society
8. Growth of permanent military establishment
9. Mobility, a) personal, b) physical, c) occupation
10. International affairs and national security as a major societal factor

Technology Trends

11. The centrality and increasing dominance of technology in the economy and society
12. Integration of the national economy
13. Integration of the national with the international economy
14. The growth of research and development as a factor in economy
15. High technological turnover rate
16. The development of mass media in telecommunications
17. An awareness of the finitude of resources

Trends in Labor Force and Work

18. Specialization
19. Growth of the service sector
20. Relative decline of primary and secondary employment
21. Growth of information industries, movement toward an information society
22. Expansion of credentialism
23. Women, blacks, and other minority groups entering the labor force
24. Early retirement
25. Unionism
26. Growth of pensions and pension funds
27. Movement toward second careers and midlife change in career
28. Decline of the work ethic

Trends in Values and Concerns

29. General shift in societal values
30. Diversity as a growing, explicit value
31. Decline of traditional authority
32. The growth of anti-authoritarian movements

Source: Coates, Joseph F. "Why Think About the Future: Some Administrative-Political Perspectives," *Public Administration Review* 36:585, Sept./Oct. 1976.

33. Increasing aspirations and expectations of success
34. Growth of tourism, vacationing, and travel
35. General expectations of high level of medical care
36. General expectations of high level of social service
37. The growth of consumerism
38. Growth of physical culture and personal health movements
39. Civil rights, civil liberties expansion for blacks, Chicanos, gays, and other minorities
40. Growth of women's liberation movement

Family Trends

41. Decline in birth rates
42. Shifts in rates of family formation, marriage, divorce, and living styles
43. The growth of leisure
44. The growth of the do-it-yourself movement
45. Improved nutrition with the consequent decline in the age of menarche
46. Protracted adolescence
47. Decline in the number and significance of rights of passage, birth, death, marriage, etc.
48. Isolation of children from the world of adult concern
49. The acculturation of children by other children
50. The growth of a large aged population
51. The replacement of the extended family by the nuclear family and other living arrangements

Institutional Trends

52. The institutionalization of problems. This is the tendency to spawn new institutions and new institutional mechanisms for dealing with what were in the past personal, private, or nongovernmental responsibilities.
53. Bureaucratization of public and private institutions
54. Growth of big government
55. The growth of big business
56. Growth of multinational corporations
57. Growth of future studies and forecasting and the institutionalization of foresight mechanisms and long-range planning
58. Growth of public participation in public institution and private institution decision-making
59. The growing demands for accountability and the expenditure of public resources
60. Growth of demands for social responsibility

APPENDIX B

SUMMARIES OF SCENARIOS OF THE FUTURE

Scenario 1 — "Hitting the Jackpot"

Basically, this is the Kahnian future. Science produced the answers; nature was kind; wise corporate business leadership acted responsibly; government stayed out of the way. The present time of troubles was merely a temporary aberration on the long term multi-fold trend line. The general, increasing, and more widely extended level of prosperity during the 25-year period placed no excessive strain on the environment: the prosperity of the period enabled the repair of whatever minor damage was done. By 2000 the highly complex and interdependent world economic system demanded a form of world government, and this same system increasingly demanded and established world rules for regulation of the environment.

Scenario 2 — "Not-So-Great Expectations"

Energy, climate, and food availability are the controlling variables in this scenario. Reduced availability of the first, worsening of the second, and a per capita decline in the third produce a depression situation by the mid-1980s. Major economic and social institutions in the industrial free market countries survive, however. A major factor in their survival is the emergence of a large minority of so-called "frugal" people who develop an alternative and supplementary economy and society which reduces the strain on traditional institutions. By the 1990s a societal adaptation is underway leading to economic recovery under less affluent but satisfactory conditions. The result by the early years of the next century is a more temperate, resource-conserving, environmentally-sound industrial system offering scope for the exercise of industrial age values on a reduced scale. Very importantly, despite the domestic turmoil that accompanies the transition period of the 1980s, no large scale international conflict or disharmony occurs.

Scenario 3 — "Apocalyptic Transformation"

The belief in unbreakable links among economic growth, energy, and affluence led the United States to bet its future on new technology making new resources available to sustain growth. By the mid-1980s the nation lost its

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Source: Stanford Research Institute Report for the Environmental Protection Agency. *Alternative Futures for Environmental Policy Making: 1975-2000*. Washington, D.C., U.S.G.P.O., 1975, pp. 21, 35, 49, 63, 79, 93, 107, 121, 135, 149.

bet, with the result that the economy nearly collapsed. The problems of the late 1980s were made worse by deteriorating climate. By 1990, however, a new ethic based on a more frugal way of life gained strength and grew very rapidly throughout the 1990s as people saw this group making do quite well in the face of adversity. By the year 2000 the "frugals" were in the majority and the United States had been transformed.

Scenario 4 — "Journey to Transcendence"

This scenario is the story of evolution and transformation. The old, growth-dependent order slowly eroded as it faced the limitations of a finite earth. From the late 1970s to the early 1990s the leadership doggedly persisted in trying to make the "American Dream" work but with diminishing success. A new order, guided by a more humane image of man, slowly emerged in the midst of the decay of the old. With ever increasing success its adherents learned how to translate its aspirations into practical realities. At the turn of the century the visible success of this new frugal sector had drawn most of the remnants of the old order to its side.

Scenario 5 — "The Center Holds"

The most significant among the variables controlling this future is the continued dominance of achievement values, even while energy shortages threatened, the climate worsened and living standards declined. Throughout the 1980s the big business, big agriculture, big government systems of the industrial countries were threatened, appearing at times to be totally inadequate to meet the needs of the societies they directed; yet they remained in control. There was public revulsion against the rising criminality and terror tactics of desperate survivor groups and their associated intellectual revolutionary apologists and sometime leaders. The frugal sector, which tried to go its own way without taking part in the repression or promotion of violence, was condemned by both the revolutionaries and the conservative achievers. With important technological breakthroughs and a cycle of good weather worldwide in the 1990s, the achievers successfully restored, in great measure, the world system of the 1970s. The new system, however, was more centralized, more highly regulated, and more authoritarian than that of 25 years earlier.

Scenario 6 — "The Boom Years"

In the late 1970s attempts to control growth in response to the energy crisis resulted in a deep and extended recession — large numbers of people had to reduce severely their standards of living. This recession increased the proportion of people seeking a frugal way of life in the 1980s. At the same time new energy technology and resources were applied effectively to end the recession and speed recovery. By the late 1990s, the United States was back on its historic track of ever-growing affluence and mastery over the world around it. The promise of comfort proved irresistible to many of those who had sought the frugal path, so that by 2000 the frugals were a relatively small minority.

Scenario 7 — "The Industrial Renaissance"

An extended recession through the early 1980s was brought on by inept efforts to control energy consumption. Growth was indeed curbed but at a high economic and social cost. The need for control was largely eliminated in the late 1980s by the advent of new technology, leading to a period of high growth. That growth was facilitated by the large numbers of people who had opted out of the consuming system during the recession. By the late 1990s the technological elite, in recognition of the finite nature of the earth, were making efforts — this time successfully — to control growth. At the same time, those who had opted for a more frugal way were again drawn into the mainstream.

Scenario 8 — "The Dark at the Top of the Stairs"

In the late 1970s, efforts to control the demand for energy brought on a decade-long recession. By 1990, people learned to live with reduced levels of energy consumption. However, this was accomplished through the gradual withering of the industrial state and the slow, grudging acceptance of more frugal life styles. In the 1990s the climate turned for the worse, pushing energy consumption up and the standard of living even lower. The end of the century marked the free market industrial world with near exhaustion, economic stasis and pessimism but with social peace, enforced by authoritarian regimes. Socialist industrial countries, better prepared by experience for these conditions, were little better off, but did not share the sense of trauma and defeat. Third world countries were left to their own resources and displayed a variety of social and economic conditions. Some were materially better off. Others, especially Latin American and African dependencies of the industrial nations, simply relapsed into primitive conditions in which cities became Calcuttas and the countryside reverted to primitive agriculture.

Scenario 9 — "Mature Calm"

Even in the 1970s many people realized the need to control growth or even limit it. The period from 1975 to 2000 was a time of learning how to do that task well. The results of inept control in the late 1970s were so bad — a deep and extended recession — that very large numbers of people just gave up on the system and opted out, seeking their own self-sufficient way of life. Aided by the need to provide for fewer numbers and an improving climate, the social managers of the late 1980s and early 1990s finally got the situation in hand. They were so successful that by 2000 many of the dropouts returned to the fold.

Scenario 10 — "Toward the Jeffersonian Ideal"

A rapid evolution in values leads to a transformed America by the year 2000. More and more people came to realize the necessity of tempering our desire for affluence with an appreciation for the limits of the earth and the needs of its people. The process of transformation was not without some disarray, particularly in the late 1970s and early 1980s, when there was little consensus on how to control growth, let alone whether it was desirable to do so. However, from the mid-1980s on, both the ability and the will to manage growth carefully increased.

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Response

The ideas presented in Clement Bezold's paper are very thought-provoking but perhaps difficult to grasp. His paper should be read very carefully, as should as many items as possible in his bibliography. In preparation for this assignment, without having read Bezold's paper much in advance, I wondered how to begin talking about the general term *government* — so I went to the dictionary.* The dictionary defines government as "administration, public policy and political clout or the office, function or authority whereby political power is exercised." Because that definition was not particularly inspiring, I looked up the word *politics* — which soon referred back to *government*. Finally, I put the book down after deciding that a dictionary or textbook approach is something you could undertake on your own. Instead, my definition of government — the future of government, major trends and emerging conditions — will come from my vantage point on Capitol Hill and from talking to ALA members in the field who deal with government at every level.

A sense of frustration occurs in trying to define politics, too, until one realizes that although politics may be a science dealing with government, policies or affairs of government, politics is first and foremost the art of the possible. Working with those involved with the legislative process requires the ability to cope, persistence, and awareness of the need to compromise. That is how our laws are made.

Compromise has a pejorative connotation in the minds of many people, but actually it is a good word, a very legitimate word. If we didn't have compromise in the political arena, very little — if anything — would ever be accomplished. As quite often happens, people confront one another head on, coming from different political orientations, and it's only after they have argued it out — night and day, in the case of the new education amendments approved by Congress this fall — that they finally reconcile their differences. (The last session of the House-Senate conference committee on that bill concluded at 4 a.m. September 29; the bill then had to be brought down to the floor the next afternoon. That is what is called "going down to the wire." Meanwhile, we were all cliff-hanging, awaiting final action on the higher education amendments which had been slowly wending their way through the legislative process for the last two years.) Thus, compromise is really a very important element in government, whether one is looking at future trends or at what is happening right now. We have to be prepared to deal with unexpected twists and turns.

No matter what the sponsors of legislation may say and no matter how measures are introduced, unforeseen circumstances may force bills off course or alter them dramatically. Sometimes, despite the best-laid plans and hard work, even the principal sponsor will end up repudiating and even voting against the final version of his or her bill. In 1972, for example, Edith Green, chairperson of the House Postsecondary Education Subcommittee, spoke against final passage of the higher education amendments which she had first introduced (in a different form) two years earlier.

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* Incidentally, another volume we should all consult is Edwin Newman's new book *A Civil Tongue*. I understand it has a chapter entitled "Paradigm Lost." A reading of that may help in negotiating Bezold's paradigm shifts.

Justice Oliver Wendell Holmes is credited with the statement: "The light of law has not been logic, but experience." This is also true of the legislative process, where many decisions are made on the basis of very little logic. There is, however, much emotion and a lot of horse-trading. There are many factors and forces that have a bearing on the way in which laws are developed. For instance, we cannot legislate morals. A classic example is the Volstead Act. History tells us that Prohibition was not only a failure, it was a disaster. The important thing is to learn from experience.

There are many issues which require thoughtful consideration and evaluation. As Bezold mentioned, approximately 24,000 bills were introduced in the 94th Congress, and of that number just under 600 bills became public law. Congressional action on even that 2 percent (which is about the average proportion of public laws to initial proposals) generated massive amounts of paper, research, and projections into the future. Research and surveys are essential to the process, of course, but so are a touch of intuition and a sense of timing. (A good crystal ball wouldn't hurt either to help sort out the wheat from the chaff, or to help discern what really will become a priority in the eyes of Congress.)

Thompson made the statement that there is no such thing as objective response to change. I think the same concept might well be applied to the legislative process. There is no such thing as one precise way to pass a law, regardless of all the fine theories and findings that may be put forward as justification during the course of hearings. We must have action, reaction, interaction — and after a good deal of what may be seen as erratic action by Congress and reaction from the public, we may or may not get a law. The evidence of need may be insufficient, or the timing may be wrong. I always like to point to the fact that it took more than ten years to get the Library Services Act passed. The bill was first introduced in January 1946. Hearings were held; it passed one body and died in the other. (As you know, legislation remains in existence for the 2-year period of a Congress through the first and second sessions, and then dies if not enacted into law.) The library bill struggled along for ten years. Support kept building for it, and it finally won congressional approval and was signed into law June 19, 1956. The point here that cannot be stressed too much is the importance of persistence.

Looking to the future, when we see federal program opportunities being developed, we must make every effort to consider them in relation to some of our library goals. We must determine how those program proposals might best be utilized for the improvement of library services. We cannot afford to sit and wait for someone to hand us a grant; we must actively pursue them. We have to take time to look ahead and to think seriously about the future role of libraries. Participation in this institute provides a great opportunity to do this, and Bezold's comments and bibliography do provide a wealth of thought-provoking material. These thoughts, however, should be viewed in the light of political reality, by keeping in mind that politics is the art of the possible. Among other things, Bezold referred to low growth, no-growth strategies, and to self-reliance. These concepts are not new to us in the library world; they make up the story of our lives.

Jesse Shera pointed out that the library is a creature of society, that the goals of a library are the goals of society. This creates a dilemma. Because we are a creature of society, we are dependent upon society's making its needs known to us. We can anticipate a great deal when we look to the future, but our ability to follow through with long-range planning and implementation is hampered when we return to our libraries only to be confronted with reduced budgets, curtailed hours and staff cutbacks. At this point we must speak out and communicate much better than we have. Our public relations programs should say that we are more than willing to do what we can, whatever needs to be done to serve the community better. The public, however, must know *our* needs. Libraries need to have expanded, not reduced, hours. Libraries are not a frill. In one way or another we must get some of the best minds in the country to appreciate the library's dilemma in trying to be responsive to public needs for expanded service while competing for survival with other vital community services.

I would like to mention a few pieces of legislation that have some immediate implications for librarians. First is the copyright revision bill. The bill took twelve years to work its way through legislative channels. After dying and being reintroduced in varying forms from one Congress to another, it was finally approved and signed into law October 19, 1976 (P.L. 94-553). It still has an interesting future in terms of its implementation, however. The law does not take effect until January 1, 1978. After that, the Register of Copyrights is required to report to Congress at 5-year intervals on how the provision on library photocopying is working in terms of striking a proper balance between copyright holders' rights and library users' needs. I urge all of you to write to your representatives or senators for a copy of the laws (House Reports 94-1476 and 94-1733) which contain the guidelines for classroom copying and guidelines for the educational use of music. Unfortunately, there are no easy answers to questions of what may or may not be copied. If something is not permissible under Section 108 (library photocopying), it may be permissible under Section 107 (fair use). You owe it to yourself and to library users to become familiar with the new copyright law before it goes into effect in order to take full advantage of its provisions. As a first step, you may want to get a copy of the November 15, 1976 issue of *ALA Washington Newsletter* (available for $2.00 from American Library Association, 50 E. Huron, Chicago, Ill. 60611), which highlights the main provisions of the law and includes excerpts and the guidelines from the two reports I mentioned.

The second piece of legislation that deserves attention is P.L. 94-482, the Education Amendments of 1976. This law deals with the extension of the Higher Education Act, but also includes several other significant amendments to the Vocational Education Act and to the Elementary and Secondary Education Act. It should be read and interpreted thoughtfully — and, I might add, exploited. For example, a new Title II-C relates to research libraries. This is something for which ALA fought and eventually gained support; it is based on a proposal of the Carnegie Policies Studies group. Title II-C authorizes federal grants to eligible research libraries to augment their collections in order to encourage greater sharing of their resources with other libraries throughout the country.

Another bill enacted this year with potential for library participation is the Educational/Broadcasting Facilities and Telecommunications Demonstration Act (P.L. 94-309). Among other things, it establishes a demonstration program to encourage experimentation and utilization of nonbroadcast telecommunications equipment, such as cable television and communications satellites. This is only a small program, authorizing $1 million in expenditures, but it is a beginning. Meanwhile, ALA is also a member of the Public Service Satellite Consortium, which is investigating other opportunities for such demonstrations.

Finally, I would like to call your attention to one more law which perhaps holds the greatest potential of all for libraries and librarians to assess where we are and where we should be going in the future. It is P.L. 93-568, which calls for a White House Conference on Library and Information Services. This is something ALA has been working on for years. (Remember what I said about persistence?) In more recent years, the ALA Council formalized the idea with the adoption of a resolution in 1972 calling for a White House conference in 1974. It wasn't until January 1973 that a bill was introduced in Congress — and that took two years to win approval. The president signed it into law December 31, 1974. For the past two years, we have been fighting for funding and trying to get the president to name members to the required advisory committee and to call the conference. Slowly, things are falling into place. This is an idea whose time has come.

More important than the national-level conference is the series of state-level conferences which must precede it. You all have a role to play in your respective state conferences. Get involved. Find out what is going on in your own state, but keep in mind that this is not a conference for librarians. We spend too much time talking to ourselves. This is a conference for users, potential users, lay people, people who need libraries and may not know they need them. We must involve a substantial cross-section of people in society, including legislators and other decision-makers. We must use this process to educate and to inform people about libraries, to inventory national library resources and services, to draw up our blueprint for future library and information services, and to muster the necessary support to implement those plans. We have our work cut out for us; now we need to get on with it.

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Prospects for Women in the Paid Labor Market*

The sharp rise in the number of women working outside the home is one of the most dramatic and important economic developments of the twentieth century. Its impact goes far beyond its consequences on the economy and on the labor market. I will discuss the prospects for women in terms of the number who will be working outside the home over the next decade or two and what they will be doing. I would like to make four major points:

1. Women's participation in the paid labor market has been rising at a rapid rate, and most have found jobs. This has already resulted in profound social and economic changes.
2. The jobs that women find, however, are typically within a narrow range of occupations. This pattern of segregation is deeply entrenched and results in lower pay and status for working women.
3. Women's job market prospects are closely linked with the prospects of the general economy. Economic growth encourages more women actively to seek work outside of the home and reduces their problems in making this transition.
4. With an improved economic climate, women's participation in the labor market should continue to increase faster than men's — but the pattern of occupational segregation is likely to continue as well. The rate of female labor force growth, employment growth, and occupational integration each will depend on the strength of the economy, the types of jobs

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* The opinions expressed in this paper are the author's own and do not necessarily reflect the views of The Urban Institute or its sponsors.

67

available, the structure of demand, male attitudes, government actions, and many decisions that will be made by women themselves.

The changing role of women has been the subject of numerous research projects and conferences in recent years. My own research is part of a large-scale research program on the social and economic status of women begun at the Urban Institute in 1975 with a grant from the Ford Foundation. The observations I am presenting are heavily influenced by the recent literature, including that of my institute colleagues.[1]

Growth of Female Labor Force and its Consequences

In just a quarter-century the female labor force — that is, the number of women working or actively seeking work — doubled. In 1950, 34 percent of all women aged sixteen and over were participating in the labor force. By 1975, 46 percent were in the work force. Meanwhile, the percentage of men participating in the labor force slightly declined. Consequently, six out of every ten additional people in the paid labor market over the past quarter-century have been women.[2] In other words, over 10 million of the 37 million women in the labor force last year would not have been there if major changes in women's status had not occurred. I will discuss first some of the causes of the change in women's place, and then some of the effects that these changes have had thus far.

The decision of a person to participate in the labor force can be described as choosing between working for pay or pursuing other activities, including keeping house, going to school, or leisure. The decision is pretty well made for the prime-age man. It is expected that, barring health or other exceptional circumstances, he will either be working outside of the home or looking for such work. For an unmarried prime-age woman without children at home, the decision is almost as simple. For a married woman or a woman with children (or both), the decision is much more complicated. Essentially, the woman must decide either to devote all of her time to keeping house or to divide her time between keeping house and working outside the home. In the past the decision was usually the former. In this century, particularly since World War II, more and more women are opting for the latter choice. One major reason for this change probably has been the increase in the potential rewards from working outside the home; their wages have risen and, as the economy has become more service-oriented and as job opportunities have become more "white-collar," there have been more jobs for women to seek. In addition, the productivity of being at home may have declined as families have had fewer children and as various labor-saving devices have become more widespread.[3]

The effects of this growth in the female labor force have, for the most part, been beneficial. Total output and income of society has increased. Families of working women have higher incomes and in many families this factor determines whether they live in poverty. There is greater economic stability within a household that has more than one earner, since the loss of one worker's job does not erase all of their income.

Increased output and income come with a price. The time spent by the woman working outside the home takes away from time spent either working in the home or pursuing leisure activities. Some work that was done in the home simply will not get done. Some work will be done at the expense of a longer total workday or workweek for the wife; other work will be done by the husband, who had not previously participated in household work and raising children. This undoubtedly causes quite a bit of conflict in many families, and probably is linked to the increased divorce rate. It is difficult to tell how much of the increase in divorces is due to the working wife's sufficient economic independence to end an already unhappy marriage, and how much of it is due to increased marital disputes. These are essentially adjustment problems that should diminish over time. More people may opt to remain single or to delay marriage. Some of the work that must be done can be shifted out to commercial services, as is already occurring; other work can be reduced by having fewer children.[4]

Another consequence of the growth in the female labor force is that it has caused a reassessment of some of our basic public institutions that were developed at a time when the stereotypical family (with the husband working and the wife at home) was far truer than it is today. Research being done at the Urban Institute and elsewhere is examining the degree to which the social security system, tax structure, welfare programs, and child support and alimony rules need to be restructured to take into account the realities of working wives.

Occupational Segregation

Despite all of the attention that has been focused on patterns of sex segregation in the labor market and all of the energy expended to remove the barriers that have kept women out of many fields, jobs that are identifiable as men's and jobs that are identifiable as women's are all around us. The library profession, of course, is one of these segregated fields. In 1975, 81 percent of librarians in the United States were women.[5] Nonetheless, this profession is less segregated than many of the traditional women's jobs, e.g., elementary school teacher (85 percent), cashier (87 percent), bookkeeper (88 percent), waiter (91 percent), telephone operator (93 percent), typist

(97 percent), registered or practical nurse (97 percent), receptionist (97 percent), prekindergarten and kindergarten teachers (99 percent), secretary (99 percent), and dental assistant (100 percent).[6]

Women's jobs are characterized by lower pay and often lower status than men's jobs requiring an equivalent amount of education and training. In many instances, the supervisor is a male. Often the jobs are logical extensions of the mother or wife role. Most disheartening for those interested in the attainment of equality for women is that the degree of sex segregation is not changing very much. A recent *Economic Report of the President*[7] found that the extent of occupational dissimilarity in 1970 was barely below that of 1960. Offsetting progress in some occupations has been the tendency of many new participants to enter traditional fields.

Which "men's jobs" have women been entering in significant numbers? Employment data since the early 1960s, tabulated by occupation and sex, suggest progress in a wide variety of occupations. Women's share of total employment rose from 34 percent to 39 percent between 1962 and 1974, and their share of professional positions showed a similar increase. Within specific professions, however, some dramatic developments occurred: the female proportion of lawyers and judges rose from 3 percent to 7 percent, of pharmacists from 10 to 16 percent, of physicians from 6 to 10 percent, and of college and university teachers from 19 to 31 percent. Because each of these occupations both requires considerable specialized training and is well-paying, these gains are quite encouraging. A few less-specialized occupations became virtually integrated within a dozen years: in 1962, 18 percent of bakers, 12 percent of bus drivers, 21 percent of bill collectors, and 9 percent of insurance adjusters were women; by 1974 women held at least 37 percent of the jobs in each of these occupations.[8]

I should note here several conditions which are most conducive to integration, as well as the characteristics of the occupations that become integrated and of those that do not. One condition that seems to make a difference is whether the occupation itself is growing. Most of the occupations mentioned above (pharmacists and bakers being the exceptions) experienced rapid growth during the period of integration.

What causes occupational segregation? Why are women more likely to be nurses and secretaries and men more likely to be physicians and administrators? Part of the answer can be found in the preferences (i.e. prejudices) of the people who make the hiring decisions, of the users of the services provided, and of the suppliers of the education and training. The remainder of the answer lies in the education, training, and occupational choices made by women themselves. These two sets of explanations interact. For example, many employers have a stereotype of a woman worker who will not work long hours or go on business trips, who will become pregnant and quit, or who will quit if her husband's job is transferred. With that image, it is no wonder that the employer is reluctant to place a woman in a responsible, demanding position, or one that requires a long period of expensive on-the-job training. This situation leads to statistical discrimination, by which the employer assigns his image of the typical female employee to the individual female job applicant. As more women are willing to work long hours, etc., these employers' stereotypes will change, but with a lag. Government action speeds up the adaptation process.

Women's Prospects in the Economy

The basic theme of much of my work at the Urban Institute involves the relationship between the status of women in the labor market and the state of the general economy. Because there is such a close linkage, a few words about the state of the economy are appropriate.

The recession that we have just been through was the most severe since the depression of the 1930s. It brought the unemployment rate from a postwar average of about 5 percent up to almost 9 percent in mid-1975. We are now only gradually coming out of that recession. The unemployment rate dropped to 7.3 percent in June 1976, but during the following six months it has been gradually rising again. In the recent political debates there was a great deal of contention over whether this was a signal that the recovery had aborted or whether it was a "pause that refreshes."

I think it is safe to say that the economy through the remainder of the decade will improve. Although the pace of the recovery is certainly in doubt, there is no doubt that recovery will occur. The president-elect's chief economic adviser, Lawrence Klein, has predicted that under the new administration the overall unemployment rate could be brought down to about 4.5 percent of the labor force by 1980.[9] This is not likely to be a steady decline; indeed, there is a good chance that there will be an interruption of the recovery again in 1978 or 1979. Beyond 1980, it's uncertain where we'll be headed. My best guess is that there will be a continuation of the kind of cyclical behavior in the economy that we have had since World War II, but that the basic trend will be an increased total number of jobs, sufficient to provide employment to all but about 5 percent of those who are actively seeking work. This still leaves a very important question for women — the composition of those jobs. Some mix of demand is more favorable to traditional women's jobs than others. After the initial recovery from the recession, the long-run trend away from blue-collar jobs and into white-collar jobs will probably resume. In the past, this trend has encouraged women to enter the labor force and has helped them to find jobs. One important exception to this trend is teaching positions. The basic change in age distribution of the population necessitates a decline in the proportion of job opportunities in elementary and secondary education.[10]

The relationships among the overall state of the economy (including the number of job opportunities that are available), the labor force participation of women, and the number of jobs women hold have been well documented. In my own study of the effects of the recent recession on women, I found that the long-run growth trend of the female labor force was interrupted, but not stopped, by the recession.[11] During the 2-year period beginning in the fourth quarter of 1973, the female labor force (the number of women working outside the home or seeking such work) increased by 2.3 million. This was about 400,000 fewer than would have been added to the labor force had the recession not occurred. Female employment rose during that 2-year period by about 900,000; this was 1.6 million fewer than would have found jobs without the recession.

I also found that the extent of women's job losses during the recession was limited considerably by the industrial composition of the recession. The industries that were hardest hit — construction and durable goods manufacturing — were industries that employ very few women. Less than 6 percent of all construction workers in 1974 were women. About 22 percent of workers in durable goods manufacturing were women. I estimated that had the recession struck all industries with equal force, women would have lost several hundred thousand additional jobs. One consequence of women's entering the traditionally male blue-collar fields will be to make them more vulnerable to cyclical unemployment.

In projections I have made of the size of the female labor force and the number of jobs women would hold by the end of the decade, I concluded that the difference between a strong recovery (the kind that would bring the overall unemployment rate down to 4.5 percent) and a more moderate recovery (that would still bring the overall unemployment rate down to 6.3 percent) corresponded to about 1 million women in the labor force. That is, one consequence of a stronger recovery would be that an additional 1 million women would be induced to look for work outside of the home. Another consequence would be that a higher proportion of women would find jobs if the recovery were strong. About one-half of all the additional jobs that would be generated by a stronger recovery would go to women. Under the stronger recovery rate, the female unemployment rate would decline from its present 8.7 percent to 5.4 percent of the labor force. Under the weaker recovery, the rate would be close to 7 percent.

Women's Future in the Labor Market

What is known and not known about the likely course of women's future labor activities? First, will the sharp increase in the number of women working outside the home continue? The major source of projections on the size of the labor force by sex comes from the U.S. Labor Department's Bureau of Labor Statistics. In September 1976 a new set of projections was issued.[12] These are based on U.S. Bureau of the Census population projections by sex, race, and age, and on the Bureau of Labor Statistics analysts' estimates of the proportion of the population in each group that will choose to participate in the paid labor market. Because we are dealing with a population whose members are at least sixteen years old, the former can easily be projected through the year 1990, and will err only if there is a major catastrophe. The latter is extremely difficult to predict. The Bureau of Labor Statistics expects that the proportion of women who will participate in the labor force will continue to rise. They project, for example, that between 1975 and 1980 the participation rate of women will rise from 46.3 percent to 48.4 percent. This means that the number of women who will be in the labor market will increase from 37 million to 42 million. This projection is based on the assumption that the increase in the proportion of women participating in the labor market will not be quite as great as that which we have experienced in recent years.

I have made some alternative projections which also begin with the census bureau's population statistics, but which use different assumptions about the rate of increase of the female participation rate. Essentially, I assumed that the participation of women would rise fairly sharply through the end of the decade in reaction to the economic recovery and with a continuation of the trend of their participation rate over the last decade. If that were the case, and if we had a strong recovery, then I would expect more than 44 million women, i.e. 51.5 percent of the female population, to be in the labor market by 1980. This is roughly twice the rate of increase of the participation rate of women assumed by the Bureau of Labor Statistics.

We could, of course, both be wrong. To give you some idea of the difficulty in projecting even the number of women that will be in the labor market, let alone what they'll be doing, I examined the projections of the 1980 labor force that the Bureau of Labor Statistics made in earlier years. In 1965 they projected that in 1980, 36 million would be in the labor force. In 1970 they projected that in 1980, 37 million would be in the labor force. In 1973 they projected that in 1980, 39 million would be in the labor force. As I mentioned earlier, they are now projecting that 42 million will be in the labor force. As new information is acquired, their projections have consistently been raised. I don't know of anyone who has come close to predicting accurately the size of the labor force even five years in advance. (You will notice that I am not making *any* guesses about projections beyond 1980.)

Why is it so difficult to project the number of women who will be working or looking for work outside the home? I think the main reason is that there are so many factors in the individual decision of whether to seek work. I have already mentioned the combined impact of the overall state of the economy and of the types of jobs that are available. Other factors are the availability to the woman of other income and the potential rewards of working. The more that a woman can expect to receive from working outside the home (i.e. the higher the wages and the job satisfaction), the more likely she will be to seek work. Another extremely important set of determinants is demography. Women who are not married more often seek work. Women without children in the home are more likely to seek work. These variables are very difficult to project, and they can make a large difference. For example, the Bureau of Labor Statistics projections made a few years ago were based on the assumption that women would have an average of 2.1 children. This is roughly the replacement rate — the number of children needed to replace the population over a long period of time. They estimated that if, in fact, each woman had an average of 2.5 children, the size of the labor force would be decreased by about 700,000 women. If the average number of children per woman were 1.8, their projection of the female labor force would be raised by about 400,000. Nobody really knows whether the low levels of fertility that we have seen in recent years will continue, or for how long. The most important point here is that everybody who has looked into the matter agrees that the female labor force will continue to increase and that an ever-increasing share of jobs will be going to women in the foreseeable future.

As more women seek work outside the home, changes should and will occur where they work, at home, and in some of our major institutions. At work, I would expect that the continued increase in female participation will help to stimulate changes in work schedules — changes that will result in greater flexibility, fewer hours worked per day, and fewer days worked per week. Increasingly, husbands and wives will be sharing the responsibilities for working both outside and within the home. Also, as more women seek and find interesting jobs, fertility rates may continue to decline. In effect, it becomes more expensive to raise children.

The tax laws, social security laws, and other institutions presently tend to favor families in which the husband works and the wife stays at home. As the balance of power shifts toward families with more than one income-earner, this should force a change. Considerable care will need to be taken, however, that such a change does not penalize women who want to stay at home.

Turning to the issue of occupational segregation, I am convinced that, in time, the roles of men and women in the paid labor market will become much more similar. I doubt that the rate of progress will be very rapid, however. The obstacles that have prevented occupational integration in the past are probably at least as formidable as those that have kept most women out of the paid labor market until this century. For example, many employers believe that certain jobs require men and that certain other jobs require women. Many women undoubtedly still share that belief. From the first toys that were put into their cradles through the education that they had in secondary schools and colleges and the first jobs that they held, these beliefs have been reinforced.

My basis for optimism for the future is that the forces of change already have been set in motion. The attitudes of young women today are somewhat different than those of their older sisters and mothers. This difference is reflected both in the education and training which many of them are choosing and in their first jobs. I suspect that the formation of role expectations is cumulative. Women in nontraditional jobs provide alternative role models to girls not yet locked into a career pattern.

The attitudes of employers, too, are changing. Expectations of what women can do change as employers see women doing nontraditional tasks. Expectations that women will drop out of the labor force very quickly (and therefore do not merit the investment of on-the-job training) decline as employers see women staying in. Attitudes change in response to the enforcement of the law. It has been only in very recent years that federal legislation has been enacted that prohibits discrimination against women in the labor market. Beginning with the Equal Pay Act of 1963 and the Civil Rights Act of 1964, employers were prohibited by law from paying women at different rates than men for equivalent work in the same establishment, and then were prohibited from discriminating in hiring, firing, promotion, job assignment, training, and other conditions of employment. These laws have been enforced actively only in the past five or six years.

The pace of occupational integration for women who decide to work will depend on the kinds of jobs that are available, the rate of change of women's attitudes, and the rate of change of employer attitudes. I have no quantitative prediction of how rapidly these will occur. Some of the information needed for this projection is available: school enrollments, apprenticeship enrollments, and economic projections by industry and occupation. These data need to be analyzed. Other information requires prediction of basic economic and social trends. Just as a prosperous economy stimulates more women to seek work outside the home, it also stimulates employers to hire them. There is some evidence that the pace of desegregation will be closely linked both to the rate of aggregate economic expansion and to the industrial composition of demand.[13]

The extreme form of occupational segregation in which men worked outside the home and women worked within the home is rapidly breaking down. I have tried to provide some basis for optimism that the pattern of segregation within the paid labor market will eventually be broken as well. I have said almost nothing about the persistent patterns of lower compensation and higher unemployment experienced by women. In 1975, the median weekly earnings of women who worked full time was $145, compared with $234 for men.[14] The female unemployment rate was 9.3 percent, versus 7.9 percent for men.[15] The exclusion of these problems was not intended to suggest lack of interest or importance; both are closely linked to the occupational segregation problem. As long as women's job opportunities are more limited than men's, they will be paid less and have a more difficult time finding work.

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13. A new conference board study of jobs that do not require a college degree also predicts very slow progress in reducing occupational dissimilarity over the next decade. The report notes that the projections are based on a continuation of patterns over the past ten or fifteen years, and that changes in counseling, vocation education, career aspirations and acceptance of equal employment methods would accelerate integration. *See:* Lecht, Leonard A. "Women at Work," *Conference Board Record* 13:16-21, Sept. 1976.

14. "Trends in Weekly and Hourly Earnings Among Major Labor Force Groups" (Press release 76-1290). Washington, D.C., U.S. Department of Labor, Bureau of Labor Statistics, Oct. 6, 1976.

15. These figures understate the disparity between the two groups, because many jobless women were not actively seeking work and therefore were not counted among the unemployed. Inclusion of these jobless women raises the female rate to 11.9 percent versus 8.8 percent for men; *see:* U.S. Congress, Joint Economic Committee, op. cit.

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Response

Numerous issues have been raised during this institute which serve to point out just how much current economic events can affect libraries. Smith focused on one aspect of the economic scene, namely, women in the paid labor market. In responding, I will try to discuss that topic as we know it best, i.e. women in libraries. It should be remembered that I will be speaking as a Canadian librarian, and that some of the illustrations I will be using will be taken from the Canadian scene. I am speaking also as a special librarian and will be drawing some examples from that area of library work, although I hope to be able to resist the temptation to tell you "how I run my library good."

Library Manpower

It seems that only one participant at this institute has read the Bureau of Labor Statistics' report, *Library Manpower: A Study of Demand and Supply*.[1] I am not surprised at this, because for some reason this document seems to have been suppressed by the library world. In my opinion, however, it is one of the most important reports related to library science released in recent years. Following are some of the highlights of this report.

1. The bureau predicts that employment in libraries will grow much more slowly between now and 1985 than it has for the past few decades. The giddy, optimistic days of the 1960s are obviously over for us.
2. Employment of library technicians is going to grow much more rapidly than employment of librarians. While the impact of library technicians has not yet been felt in special libraries to any great extent, I am sure that many of you who are from public and academic libraries have already seen the bureau's prediction in this regard come true.
3. Three-fourths of all job openings in libraries will be replacement positions. In other words, not many new jobs will be created.
4. New graduates will be available to fill 80 percent of all positions which

become available. This does not bode well for librarians who are now in the field and might wish to change jobs within a few years.[2] These new graduates will, however, have to be very mobile, and they may have to accept positions which are not really in their preferred line of work, nor are located in a geographic area in which they would otherwise choose to live.

5. Demand is likely to remain strong for minority librarians, community outreach librarians, media/audiovisual specialists, and experienced library administrators.

Individual librarians can readily see how the bureau's forecast might affect them in the future, but the report has even greater implications for library educators. Courses of study will have to be revised to emphasize the skills and specialties for which there will be a demand. Previous qualifications and personal characteristics of prospective librarians will have to be carefully examined by library school recruiters to ensure that the qualities which "make a good librarian good" are possessed by persons entering the field.

Women in Libraries

Smith mentioned that roughly 80 percent of librarians are women; we have been referred to as the "4/5 minority."[3] This was not always the case, however. At the first ALA conference in 1876, only 13 out of 104 attendees were women.[4] Men were running the libraries then. At a conference in London in 1877, Justin Winsor of Boston opened the doors for female employment in libraries.[5] We can probably thank him for that; however, he deliberately encouraged women to join the profession because they would work for less money. He anticipated that library administrators could get much more work out of women than out of men, for much less money. He pointed out that women were very good at housekeeping chores, and would therefore be excellent library workers. At that time, it was felt that the presence of women in libraries would provide a spiritual "uplift" to the masses.[6] That is where the famous "little old lady in tennis shoes" image began; unfortunately, we have not progressed very far beyond it.

As women entered the profession in greater numbers, they slowly began to attain positions of power, and by 1950 they had more or less done so; it has only been since then that women began to lose their grasp (see Table 1). Data for academic and special libraries have not been included in Table 1, because statistics on the latter are virtually nonexistent, and statistics on the

Type of Position	*Year*	*Percentage*
Deans and Directors of Library Schools	1950	50
	1970	19
	1975	20
State Librarians	1950	80
	1970	48
	1975	34
Public Library Directors (50 largest cities)	1950	24
	1970	22
	1975	14

Table 1. Percentage of Women in Top Library Positions

Source: For statistics for 1950 and 1970, *see* Schiller, Anita R. "Report on Women in Librarianship," *American Libraries* 2:1215, Dec. 1971; for 1975 statistics (estimated), *see* "1975-76 Library School Salaries Are Up," *Library Journal* 101:1996, Oct. 1, 1976; Simpson, Donald B., comp. *The State Library Agencies.* Chicago, Association of State Library Agencies, 1975; and Shearer, Kenneth D., and Carpenter, Ray L. "Public Library Support and Salaries in the Seventies," *Library Journal* 101: 781, March 15, 1976.

former indicate that from the beginning, women in academic libraries could not attain such positions.

When the Association of Research Libraries was founded in 1933, fifteen of the forty-three directors were women. Between 1934 and 1969, two of the 147 directorship appointments were made to women. Between 1970 and 1973, four women were appointed; all four were already employed in the library in which the appointment was made, and two were over sixty years of age.[7] These women had to take the route of seniority to get where they wanted to go.

It is a little more difficult to evaluate the special library situation. An "eyeball" examination of the proofsheets of a forthcoming directory of Canadian special libraries[8] indicates that roughly 73 percent of all heads of Canadian special libraries are female. This percentage also holds true for the heads of the largest corporate and government libraries in Canada. Thus, it may be true that some female special librarians are moving ahead faster than female librarians in other fields. (A thorough analysis of the *Canadian Library Directory, Part II* can be expected in the future from Beryl Anderson, who is chief of the Library Documentation Centre, National Library of Canada.)

Institution	*Male*	*Female*
Public Libraries 1975 (median)	**$24,000**	**$18,750**
Academic Libraries 1975-76 (avg.)	**$22,242**	**$17,062**
Library Schools 1975-76 (avg.)	**$31,644**	**$30,373**

Table 2. Salaries of Directors

Source: Shearer, Kenneth D., and Carpenter, Ray L. "Public Library Support and Salaries in the Seventies," *Library Journal,* 101:781, March 15, 1976; "Salaries of Academic Librarians 1975/76," *College & Research Libraries News* 37:231-34, Oct. 1976; and "1975-76 Library School Salaries Are Up," *Library Journal* 101:1996, Oct. 1, 1976.

Type of Library	*Male*	*Female*
Public	**$10,063**	**$ 9,683**
School	**$12,415**	**$10,996**
Academic	**$11,142**	**$10,269**
Other	**$10,328**	**$10,252**

Table 3. Average Beginning Salaries, New Graduates (1975)

Source: Learmont, Carol J., and Darling, Richard L. "Placements and Salaries 1975: A Difficult Year," *Library Journal* 101:1493, July 1976.

Women and Salaries

Concerning the subject of salaries, we note that again men fare better than women (see Tables 2 and 3). In all types of libraries at every level, women earn less than men. I don't think I need to repeat all the figures in Table 2 — their implications are obvious. The library school salaries show much less gap than any of the others, but library school faculty members and administrators are generally the best paid of all people in library work.

Librarians may have been conditioned to expect that most library directors are going to be male, and that they are going to be paid more than females; however, it is very difficult to understand the salary differentials at the starting level shown in Table 3. Despite the equal pay legislation that prevails today, men are still being paid more than women.

The narrowest gap in salary ranges for new graduates is in the "other" category, which includes all types of libraries that do not obviously fall under public, academic, and school categories. These figures were also borne out in the 1976 salary survey conducted by the Special Libraries Association (SLA), the results of which will appear in the December 1976 issue of *Special Libraries.*[9] The association discovered that the average beginning salary for all special librarians was $11,000, with only a minute difference between male and female salaries at the starting level. As special librarians get older, however, the male/female salary differential begins to widen. Between the ages of twenty and twenty-nine, it remains small (around $200), but when a librarian reaches the age of thirty, the gap starts to expand. Between the ages of thirty and thirty-nine, the average salary differs by about $1,000; this difference increases to $4,700 between the ages of forty and fifty; and from age fifty onward the gap is in the range of $5,500 or more. It seems that international women's movements have had little effect on the library world.

Whenever librarians are discussing salaries, the question "How well are all of us paid?" usually arises. Most librarians certainly feel that they are underpaid, and some observers consider that because librarianship is predominantly a female profession, librarians have tended to accept lower salaries than would members of a predominantly male profession. The Bureau of Labor Statistics reports that female librarians, while earning less than male librarians, do relatively better than women in other professional occupations.[10] The situation is slightly different in Canada, where, in fact, women librarians fare even worse in terms of salaries than women in most other professions (see Table 4).

Table 4 has been adapted from a larger chart published by the Ontario Ministry of Labour. The original table includes 1971 census data for approximately 400 selected occupations. For our purposes, I have tried to select some of the occupations with which I believe librarians sometimes tend to compare themselves. For Smith's benefit, and also because I work with economists, I have extracted the data on economists. Of 400 occupations ranked by salary, male librarians and archivists place 118th. The female librarian ranks 25th among females in 400 occupations. It does, of course, appear that women librarians tend to do much better than many other women, but it is disheartening for librarians of both sexes to see many occupations which require less education, training, and responsibility ranked ahead of librarianship in salary.

The third column of Table 4 offers an encouraging note for librarians, i.e. female librarians in Ontario earn 88 percent of what male librarians earn. Among the professional groups in this table, social workers form the only group with better male/female pay ratios than those of librarianship; and of all 400 occupations, there were only 5 or 6 categories (namely, in

Occupation	*Rank by Salary*		*Percentage of F/M Earnings*	*Percentage of F in Occupation*
	Male	*Female*		
University Teachers	11	4	71	12
Economists	25	16	67	10
Education & Vocational Counselors	33	6	84	32
Commun. Coll. & Vocational School Teachers	43	17	73	24
Secondary School Teachers	49	9	84	35
Social Workers	101	21	89	56
Librarians & Archivists	118	25	88	78
TOTAL of all occupations	400		57	

Table 4. Selected Occupations — Ontario (1971)

Source: Ontario. Ministry of Labour. ***Equal Pay for Work of Equal Value: A Discussion Paper.*** **Toronto, Ministry of Labour, 1976, pp. 75-91.**

medical and elementary school teaching occupations) where the ratios were better for women.

Equal Value Concept

A comparison of salaries raises the question of the "equal value concept," because librarians frequently try to compare the value of their work with that of other professional workers. The equal value concept is one which is extremely difficult to measure, and its application to the labor market in terms of salaries is an even more difficult task. The Ontario government's analysis of this debate has been published in the hope that interested parties will respond to the document and add their thoughts to the scant information now available. The Ministry of Labour points out the current lack of value measures to indicate the existence of equal value jobs, as well as the lack of knowledge about how much it would cost to implement such a program, how it would relate to Canada's anti-inflation program, and whether an excessive amount of government intervention to determine wages would be necessary. The government's report is a document which librarians as a group should study carefully. I think U.S. librarians would also be interested in the contents of this report. Special librarians in particular need to consider it, because it is in the special library environment that this kind of evaluation is most keenly needed.

The lot of the special librarian is often a very lonely one. Currently, more than 75 percent of librarians in Canadian special libraries are operating a one- or two-person library. Frequently, these librarians are viewed by management as glorified secretaries or file clerks. In the past the SLA salary surveys have illustrated that librarians in one- or two-person libraries are the lowest paid. Such a librarian is also likely to be female, and in the question of equal pay she must ask: "equal to whom?" If we feel that we are underpaid, we must ask whether this is because (1) most of us are females, (2) the library is unimportant in our institutions, or (3) we are earning what we deserve. This last possibility must be considered as objectively as possible. The question of "good" service has been raised at this institute. Most library users are surprised when they find it, because for the most part their experiences as users have not led them to expect it.

Another interesting item which emerged from the 1976 SLA salary survey (this will appeal to the special librarians among you) is that librarians whose library entities are known as "information centers" earn an average $1,100 more than librarians who call their entities "libraries." I will not discuss here the definition of *information center* versus that of *library;* many articles have been written about that. I do think, however, that the fact that information center librarians are paid more is significant, and I can illustrate this from our own experience at the Bank of Commerce. A few years ago the company had two libraries, the library and the economics library. As happens so often in special libraries, there was a merger. The new unit was called the information center, and the results of this name change were unbelievable. Our clientele changed, our reference questions became more sophisticated, and our circulation statistics skyrocketed — yet we were doing little different from what we did before. I am not suggesting that we all go out and change the names of our libraries, but I think there is an indication here that the information function has become more important than ever before.

It is also apparent that with tightening budgets and unhappy economic conditions, librarians are going to need all the support they can get from their friendly clientele. In order to do this, we must find out who makes up our clientele and what their needs are. (Special librarians have a distinct advantage here.) We all still have a long way to go in that regard, however. Librarians have been notoriously unsuccessful at measuring their performance. We keep great amounts of statistics, none of which really tell us how well we are satisfying our clients' needs, nor how our customers feel about the services which they are receiving (or not receiving). Thompson mentioned earlier the fact that economists are trying to measure the quality of life; GNP has little to do with it. The same thing must be done in libraries.

Our circulation statistics may be growing, but they really do not help to tell us what kind of job we are doing.

Cooperation

In addition to learning how to measure the quality of library service, librarians from every sphere must learn to cooperate with each other more effectively. We must try to forget about the "bigger and better" philosophy and concentrate on ensuring that all members of the population in all parts of both of our countries, from every field of interest, can obtain access to the information which they require. The prevailing concept of resource-sharing is extremely disheartening to special librarians. Special libraries are not well understood by other types of libraries, and consequently have frequently been bypassed by many cooperative programs of resource-sharing. Special libraries have been criticized as being takers rather than givers. They are the first to admit that they must borrow, and borrow frequently; nevertheless, by eliminating special libraries from some networks, the public is being deprived of access to some of the best mini-research collections in existence. Special librarians also have a great deal of skill in face-to-face interviewing with their clientele, and in evaluating information for people. These are contributions which I think special librarians can make in networks, too.

Related to the entire networking problem is the present controversial issue of interlibrary loan charges. Many large organizations in both the United States and Canada have instituted a fee for this service. People seem to be jumping on the bandwagon without giving much thought to the overall implications in terms of public access to information. Members of the Canadian Library Association passed a unanimous resolution at the annual conference in June 1976 calling on librarians not to levy interloan charges until the question has been studied more carefully.[11] This resolution does not seem to have had much impact. The Metropolitan Toronto Library Board has recently started to levy charges, and once again special libraries have been singled out for higher fees than those levied on some other library institutions. This state of affairs is particularly upsetting when we frequently note that the public library does not hesitate to send us its customers when its own resources fail. We are always happy to help a member of the public when we can, but we do feel that the arrangement should be reciprocal.

In regard to the subject of cooperation, the time has probably come for library associations to forget about some of their differences and to think about the common good. Associations must learn to cooperate with each other in pooling their resources and expertise when dealing with common problems such as copyright legislation which affect members of the profession in every field. The president of the Canadian Library Association pointed out this year that there are more than ninety different library associations operating in Canada.[13] It has become evident that this is far too many for our country to support, and I think that there will be some mergers in library association activity in the coming year. Canadian librarians are about to embark on an examination of proposals for changes in Canada's copyright law, and we hope that we have learned something from U.S. experience. The Canadian Library Association has asked for commitments from other library groups for a unified effort toward our mutual goal of satisfactory copyright legislation. There are undoubtedly numerous other objectives toward which we can set our cooperative instincts.

It is my opinion that our associations and library schools have a joint responsibility toward the most important resource of libraries: library staff. Very few librarians are able to attend meetings such as this; only a small percentage of library association members ever attend a real conference. We need to have more continuing education programs, and it is time to hold some local and regional workshops aimed at people who cannot get to national conferences. You might be interested in a pilot project initiated by the SLA Education Committee. An expanded 1-day workshop, originally presented in a shorter form at the 1976 annual conference in Denver, will be tried out in four geographical areas in North America between January and June 1977. If these workshops are evaluated to be successful (both from the educational and financial points of view), the same "traveling road-show" will be available to librarians in other geographic areas.

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Interactive Electronic Media

I am going to discuss two major new media: interactive electronic systems and video disc. One is already with us, although on a very small scale, and it is the kind of electronic media represented by PLATO and similar computer-based systems. Although one reads about it constantly in *Popular Mechanics*, the video disc is not here yet. It seems certain to come, however, and I will try to outline some of the basic properties of both these new media. Because I am not a librarian, I cannot point directly to the exact impact these media will have on libraries, but I will as a layman allude to the kinds of impact I think are likely.

In order to be concrete, I will present some examples of what is possible today with the interactive electronics medium. First, I will use the PLATO system of the University of Illinois as an example, and after having shown some examples of how such a system can be used, I will then describe some of the major aspects of publishing, distribution, royalties, copyright, etc., for this kind of medium. My discussion will then turn to video discs.

There are about 950 PLATO terminals just like the one to be used here which are connected to a large computer at the University of Illinois. About 300 of these terminals are on the campus and others are scattered around the country. In its normal setting the PLATO terminal does not have a video camera directed at it transmitting pictures to a television monitor such as we have here today. The PLATO terminal is normally located in a classroom, and more likely there are twenty or thirty terminals in that room, with many students and teachers studying and writing materials together. Although my demonstration will use only one terminal here this afternoon, I will show you a few examples of the way such a medium can be used for instruction. I will then demonstrate some of the impact that this medium brings to communication per se.

The first example is a program used for primary school math curriculum, one which was developed at the University of Illinois on PLATO. This particular lesson comes from a program for approximately fifth grade-level children dealing with fractions. The program begins by asking my name. It then says, "You are the proud owner of a brand new pizza place" and asks me to make up a name for this place. Let us call it the "Library Pizza Palace." The task is to divide two pizzas among three children. The three children are shown on the screen with two pizzas and a cutter. If I point at one of the pizzas, it passes through the cutter, is sliced into three pieces, and we are ready to distribute the slices. I pick up a piece of pizza on my finger, and give it away; another one, and give that away. After cutting the next pizza and again dividing it, I think that I will have divided them all equally, but one child says, "I got a lot"; another says, "That's not fair, I should get more"; and the third, "I got my share." Now I must start all over again, so I will repeat the exercise and try to get it right this time.

What happens here is that the screen is so sensitive that, as I point, it allows me to pick up a piece and move it around. Notice how very interactive this terminal screen is. It responds almost instantaneously to whatever I do — and that is one of the unusual features of this kind of a medium. It will say, "That's fine," and ask me how much pizza each child got. I am invited to say that each received two-thirds of a pizza. We can then watch the children eat their pizza.

That was a silly example, but it illustrates one of a very broad range of techniques used in that elementary school math curriculum, and it is somewhat representative. Using PLATO is not a passive experience for the child, but a very interactive one.

I will take the next example from a college-level program. In some ways it is very similar, but this lesson deals with a fractional distillation experiment in chemistry, an experiment not usually done in the laboratory because it is too complicated, too dangerous, and requires equipment that an undergraduate laboratory does not usually have. It is expensive and it can explode. On the terminal screen are the pieces of the still to be assembled. I will pick up the condenser and put it where it belongs. Then I will take the flask, but PLATO says, "No, you've got to hook the take-off adapter on first." I pick up the take-off adapter and put it where it belongs. Now I can attach the flask. I go through many of the intellectual operations that I would in fact perform in a laboratory if it had this equipment. I will continue to assemble the rest of the still by putting the thermometers in place. Then PLATO says, "Okay, I put in 100 milliliters of a 50/50 mixture of pentane and hexane. What do you want to do now?" I reply that I would like to distill, but it says "No, before heating the oil bath you'd better add a boiling chip." I do, and then PLATO says, "And now what do you want to do?" I again say I am ready to distill. "No," says PLATO, "now you need to turn on the cooling water. If you don't do that you are going to be in trouble." I add cooling water. "Fine. Does it go in the bottom or the top of the condenser?" I answer that it goes in the top. PLATO replies, "No, it doesn't go in the top, it goes in the bottom; otherwise it won't work." The cooling water is added at the bottom. PLATO asks, "Now what do you want to do?" I answer that I would like to distill. "Oh, all right, fine. Remember that as you go, you're going to have to control the temperature and you're going to have to take off fractions as they distill out."

This is what happens. I will heat the oil bath, which will cause the liquid to boil off. As it hits the cold condenser, it condenses into this flask, so that the most volatile substance comes off first; that is what collects here. I take that off, put another bottle on there, collect another fraction, and so forth. In the lower left-hand corner of the screen, PLATO notes the temperature, which is presently 20° C. It says, "Warm the oil bath until the distillation starts." I will warm up the bath: 25°, 30°, 35°, 39°, 44°, 49°, 54°. Distillation has begun. The substance distilled out into the condenser; however, it stops again because I have allowed it to get too cold at 54°. I have already boiled off everything at that temperature. I can take a sample and warm things up a bit more; again the distillate comes off. I can remove a sample, then warm it up. A graph is building up of distillation fractions. I warm it up to 74°; "Oops," says PLATO, "you just blew up the still because your bath temperature was too high. Let's put the apparatus together again and repeat the experiment." Here the lesson returns to the beginning.

Note that in a few minutes I was able to go through the basic intellectual components of what is done with this kind of a still, without getting hurt in the explosion. That example represents another type of use of PLATO. Again, notice that the hallmark of this program is a high level of interactivity. I started a process and was interacting with it in real time as it proceeded. I had to make decisions as I went along and, as in the pizza case for the young child, so it is for the junior or senior in college: there is a higher level of interactivity than can typically be achieved with other kinds of media.

I have another kind of example. It is a lesson on "Introduction to Esperanto," prepared by my wife, Judith Sherwood, in which she attempts to use the graphic and interaction capabilities of PLATO to introduce something that a person has never seen. It is plausible to assume that those fractional pizzas are helpful to the children, but you already know that material. I am using the following example because it may be something you do not already know. Material here is presented in a structure which recurs many times in teaching languages.

The lesson begins simply by introducing some nouns. First, flowers appear on the screen with the word "floro": and it is hoped that you get the idea. If not, you are asked to give PLATO that word. I type *f, l, i* — and am stopped immediately at the error. This is made available by interactivity. Here you can look at everything the person does and reply appropriately. Now I type *f, l, o, r, o*. Good. Next noun: "tablo." I am asked to type it, too. Now can you tell the difference? "Floro": yes. "Tablo?" Yes — and your reward is a "stelo," or star.

Having introduced some nouns, I can now introduce some prepositions. "Where is the flower?" "The flower is on the table." "La floro estas sur (on) la tablo; apud (beside) la tablo; sub (under) la tablo; super (over) la tablo." Now we will see a typical drill which is very easy to write and very useful in language studies. We are shown a drawing of a flower standing beside a table. Notice that no English is used in the presentation. We are asked, "Kie estas la floro?" "La floro estas." I will say, "sur," but PLATO says, "No. The correct answer is 'apud.' " There is, fortunately, an erase button on the keyboard. I can erase my answer. Notice that the program removes the correct answer, so that I must use my short-term memory to say that the correct answer is "apud." The program will now remember that I had trouble with that word, thus I will get extra practice on that word (a very common trick in these kinds of drills). Next I get different prepositions, each presented in random order. If you will watch, the "apud" example will recur at some time. I will get it right this time, and then I will not have to do it again. The lesson gets more complicated, with examples of nouns being "under," "beside," "over," and "on" other nouns. We teach a broad range of languages this way. A drill need not just be on vocabulary; it might be on grammar, sentence structure, or other language element. With these three examples I hope that I have given you some basic notion of how this kind of interactive medium appears.

I want at this point to say something about the distribution of such teaching materials. First, there is a tendency for materials of the kind illustrated to come in modular packages. Here is a lesson on fractions dealing with pizzas; here is another lesson on fractions, but it emphasizes conversions from improper fractions to mixed numbers. Once these lessons have been written, they can be assembled more easily in this kind of medium than can the chapters of different textbooks. That is the first point I want to make. Given this kind of interaction, teachers or self-study students can assemble their own book of chapters, and the chapters may come from disparate sources. This is something that may be done to some extent with books, but, at least in university education, it is a little difficult. An instructor may use three books during the semester, but will use only chapters 2, 3 and 4 from one book, chapter 5 from another book, etc. He also may use another textbook, but substitute his own chapters for chapters 7 and 9 because the coverage is inadequate on those topics. In this electronic medium there is a tendency to write the chapters in such a way that different people can assemble the chapters in different orders to meet their individual interests. In particular, the person using this kind of medium will probably be using materials already in existence, but the teacher might want to add something of his/her own. I will take a very simple example, an avowedly contrived example, to show you how a local teacher might write such additional material.

Suppose I am a teacher showing a drawing of a triangle to a student and ask, "What is this figure?" The student will probably answer, "It is a right triangle." This is a rather dull form of interaction, but it might be useful under certain circumstances. How can I input that triangle into this medium for later recall? Because I want to set up what the student will see, I am offered a scratch pad by PLATO. I point at the screen and mark a point. I mark another point and others until I have drawn my triangle. That is what the student will see. At this place on the screen I want the student to see the text that asks, "What is this figure?" (Remember that there is an erase key to make changes in anything that is done.) Let us also put a little arrowhead on the screen to show the student where to type in an answer. That is the gist of it: the triangle, the question "What is this figure?" and a place for the student to type the answer. I will now also put a circle on the screen and state that I want to write in four times normal size, rotated 45 degrees. I'm going to put text on the screen that states, "Wow." I have now developed a fairly complicated display of what the student will see. Next, a program is written for me. I could have written this program by hand, just as computer programmers have done for twenty years or so.

This is essentially an example of automatic programming. I simply describe what I want the computer to present, and it writes a program for us. All I have to do to make it into a fully operational thing is to put in what might be one possible answer. For example, "It is a (right, rt) triangle," where "it," "is," and "a" are optional words, and "right" and "rt" are synonyms. Having inserted that into the body of this otherwise automatically generated program, I can now try it out and pretend I am the student. It appears on the screen, just as the student would see it. I am going to type: "a pretty tringle, right?" It says, "Well, you're close." The word *pretty* is marked as wrong. It shows us with special markings that there is a word missing between "pretty" and "tringle." "Tringle" is a misspelling, and the word *right* belongs to the left. PLATO automatically gave me that appropriate feedback on the errors I made. Let me put in the correct answer: "a right triangle." It says "Wow" inside a circle. With these kinds of techniques, the local teacher can produce additional materials to augment whatever happens to be in the library.

What about the distribution of materials? First let me show you what we think of in terms of the physical aspects of distribution. We have a map of the United States showing the major sites of PLATO terminals that are presently connected to the Urbana center. This is a national network. A flag on the map does not represent a single terminal, it represents a cluster of them. For example, in one classroom at the University of Arizona, twelve terminals are connected to the Urbana center. In terms of communication costs, 950 terminals spread over an entire continent is a very expensive way to operate. In the long run, however, if this technique is useful, we can imagine that terminals will be located in homes as well as in schools, and a thousand terminals will be served by one large computer which is more regionally located. The present geographic distribution pattern is bizarre and anomalous, but regional systems have already been established in Minneapolis, Florida, and Quebec City. In the long run, we imagine that these kinds of services will be provided in the same way that telephone service is provided, i.e. with local exchanges in major cities serving the subscribers and customers nearby, and with connections among those exchanges. The Minneapolis and Urbana PLATO systems are already tied by a phone line through which curriculum materials and electronic mail flow. Regional centers probably will eventually be established throughout the country and those will share curriculum materials and other kinds of information. The distribution of the pizza lesson, for instance, would typically be handled as follows. Every exchange would have a copy of the pizza lesson. Any revisions to that lesson, and all newer editions, wherever they originated, would be passed from one node to another and would supplant the previous editions or, if the previous edition was also useful, they would simply be added to the catalog. The catalog would then contain two versions of the fractional pizza lesson. Multiple copies can be justified, for it is reasonable to assume that the information flow from one node to another (e.g., between the Urbana system and the Danville, Illinois system) may be slow and the institution should have a copy available in each place. It is the same justification for having a copy of the same book in each library.

I will show a map of Illinois on the terminal in order to give you an idea of the different users of PLATO. In Illinois there are terminals not only in university environments, but also in community colleges, prisons, industrial training centers, and grade schools. As I stated earlier, about 300 of those 950 terminals are on the University of Illinois campus.

In addition to the problem of distribution, there are problems of creation of programs, of copyright, and of royalties. What can we expect? What are we presently doing? Unlike many media, with this kind of medium it is possible to track the usage of materials on a detailed basis. I believe that in Scandinavia authors actually receive some kind of usage fee based on the number of times their books are checked out of a library. It will be possible not only to identify and track usage sites easily, but also to know how many people have used the program, how many times, and for how many hours. With those data, it will be possible to return to an author some royalties as well as some detailed information on which markets have accepted his/her materials with the most interest. As a beginning, we are going to return a few cents per contact hour. Notice that there is a little difference here between this and the book market or the record market. In the book market, an author of a textbook is paid on the basis of the sale of the book, not on the usage of the book. The book may be used five times, and by making it possible to track actual usage itself, a slightly different way of calculating royalties is offered.

This field is very new for copyright. In this respect, about the only thing the university has done with regard to PLATO is to place copyright notices at the beginnings of lessons, which may mean nothing or it may mean something. To my knowledge, no one has yet actually made the effort to discuss copyright of interactive material with the Register of Copyrights. The solution may be very similar to the copyrighting of a videotape presentation of a television play — but it may not. In this medium, there is more difference between what appears on the screen to a user and the inner workings (i.e. the program) than there is in the case of videotape, where what appears is also what happened in the studio itself. With interactive programs, this correspondence is very slight. It may be that the external appearance of a program, i.e. what it looks like, is a copyrightable production or presentation; however, the inner workings of the program itself probably are not and perhaps will just be kept as trade secrets.

In addition to these questions, there are questions of cataloging. These are very new to both the Urbana system and the Minneapolis system, but there has been quite a bit of activity in cataloging work. Because of the nature of the materials, the cataloging of programs is of a somewhat different character than the problems of library cataloging. These materials tend to be short, single concepts, somewhat smaller entities which are more like the chapters of books than books themselves. What is appropriate for cataloging at this "microscopic" level may not be entirely clear from library practice. We hope to learn from librarians about what we should be doing. It will be a long interactive process in trying to understand how best to present the catalog information that tells you, "Yes, the pizza lesson exists... it deals with fractions."

What I have shown thus far is that this particular system was built mainly for direct instruction. There are, however, other uses of such systems, uses which impinge upon the distribution questions. You notice that the word *notes* appears here on the screen. While I have been talking, someone has sent me a note — a piece of electronic mail — and I am going to read it. This is an interesting note. Yesterday a person in Delaware wrote to me to ask about attaching typewriters to the terminal for making certain kinds of hard copies. The question was not entirely clear, so I wrote back asking if the question related to the actual kind of typewriter the person used or how he programs the thing to use that typewriter. We received this note back from him today (notice that in the space of twenty-four hours, there have been two full exchanges of mail, which is otherwise hard to come by these days in Delaware): "We are interested in learning about your basic algorithm between PLATO and the external device and the device itself." I can now write back to him, saying: "Okay, I will write back to you later today. I'm giving a talk at the moment." By pushing the button, I have sent a note to Delaware. The next time that person goes to the terminal, he will see a little red flag saying that there is mail for him — just like a rural mailbox.

Another kind of electronic communication open to public and special-interest forums is multiway forums. Here is an example of a public forum. A fellow at Cornell wrote: "Look, I'm trying to write a program of the following kind. Am I doing something wrong? I did this and this and this, but it doesn't come out properly. What's wrong?" Someone in the math group says, "I tried it and it worked for me." Someone in Connecticut asks, "Is it possible that one of those numbers was negative, which would make it not work properly?" The fellow at Cornell answers, "Yes, I'm not sure about that," followed by someone in electrical engineering who says, "Well look, why don't you try this with such and such, and then that will prove it once and for all." This example represents not a one-to-one personal communication, but an open forum. This example happens to be devoted mainly to programming questions, but there are all sorts of special-purpose questions, from religion to technology, that could be discussed. This many-to-many electronic communication capability is a little different from any of the media we presently have.

Still another form of communication that is rather specific to this particular kind of device is the possibility of talking to people. For example, I will ask to talk to a colleague named Dennis. If he is looking at his terminal at the moment, he sees a message saying Bruce Sherwood would like to "talk" to him. Actually, we will type messages back and forth to each other:

"Hi. Sorry to bother you; I'm in the middle of a presentation and would like to show people how you and I can talk this way. Say something!"
"Hi, Bruce," he says.
"Could you show us something on your screen involving some graphics?"
"Sure. Here's a graph showing student grades on the last exam."

What we are looking at here is what is on his screen, which he offered to us. It is as if we were looking over his shoulder while he worked. (To ensure privacy, a note at the bottom of his screen reminds him that I am looking at his screen.) An important use of this machinery is that of consulting on programming problems. The consultant can look at the screen of the person who is asking for assistance and suggest changes that should be made in the person's program.

Another kind of programming help available is an extensive on-line reference manual. If I want to know about how to draw circles, I just type the word *circle* and it gives me all the information possible on how to draw different circles, on parts of circles, etc. If I want to know how to handle various possible answers the student might give, it will tell me how to do that. This is the closest we have come yet to information retrieval per se in this system.

For reference services it would seem plausible to plug into existing commercial systems. Many commercial bibliographic searching services and other kinds of information retrieval systems are presently available. If the type of electronic utility exemplified by PLATO grows to a large scale, it could provide a window through its terminals into these existing services. For a multipurpose utility, it seems only natural to consider the electronic medium as a window to a variety of public utility services.

I will briefly discuss some aspects of the emerging video disc technology. A video disc player could be connected to your home television set, and a video disc placed on the player like a record on a phonograph. One of the obvious uses of this technology is simply to show movies. A more revolutionary use, however, springs from the fact that instead of holding a half-hour movie segment, a disc could hold about 50,000 still pictures! When allowance is made for the relatively poor resolution of television, I estimate that twenty of these television pictures could encompass the text of one page of the *Encyclopaedia Britannica*. One video disc could therefore hold the results of photographing 2,500 *Encyclopaedia Britannica* pages, and 10 video discs would hold the entire encyclopedia. While this may appear to be a great deal of information on one thin disc, it is not an overwhelmingly huge amount of information.

Another way of storing information which makes a video disc seem even larger is to store the data on the video disc so that one disc corresponds to approximately two *Encyclopaedia Britannicas.* (If one disc can hold one-tenth of an encyclopedia, while another disc holds two encyclopedias, the difference between holding one-tenth of an encyclopedia and two encyclopedias is a factor of twenty.) This compression factor comes from the following considerations. When this type of dot-oriented technological gadget prints an "A," it must be given specific information. It must be told that there is a dot at the top of the "A," a line of dots down each side, and another line of dots for the horizontal crossbar. About twenty or thirty pairs of numbers would be necessary to print the "A." In contrast, if the information is going to be limited just to text, then you need just one number (one through twenty-six) to indicate the letter you want. You simply say "I want letter no. 1," and the device looks into its innards and says, "Oh yes, character no. 1. That's an 'A' and it looks like that. What's the next letter?" There is a compression factor of twenty in the numbers needed to specify a letter. This latter scheme of encoding, using "character codes," allows for tremendous compression. It does not handle the pictures of the *Encyclopaedia Britannica,* but it does handle the text, and some mixture of text and pictures would be common. (You can slice the storage in other ways, too: if you don't want 50,000 pictures you could have 300 symphonies recorded instead!)

Capabilities of this kind suggest a possible future connection between computer-based systems and video discs, for video discs need not hold only static information. Because the disc could contain programs which, coupled with a little computer beside the player, could perform a variety of operations, there is a likely connection between video discs and home computers. At first these operations will emerge as being quite separate, but when the characters are encoded, it is likely that a little computer could look at those character codes and say, "Hmm, character no. 3, what's that? I look into my memory of what letter no. 3 is. Oh yes, it's a 'C.' I make a C like that." There will be, in fact, some overlap between the two new technologies.

The problems of distribution, royalties and copyright for video discs are quite different from those of the interactive electronic medium we considered earlier. For the latter, there is one centralized store with much information and a network to connect people. It is very good for keeping things up to date and for keeping people in touch with others. Video disc distribution, on the other hand, is likely to be decentralized like phonograph records: they may be purchased in a store or checked out of a library and then used on a local player, either in the library or at home. The economics of video disc distribution, including royalties, are somewhat peculiar. At the present time authors receive royalties for books as a share of the selling price of the book. If the book sells for $5, the author of the book gets $.50 to $1 — a fraction of the selling price. The selling price includes manufacturing, distribution and advertising costs. For a video disc which could hold two *Encyclopaedia Britannicas* and with manufacturing and distribution costs likely to make the selling price approximately $10 to $20, it is difficult to see how the royalty fees can be established to compensate the writers of all that material. Thus, even more than in the case of photocopying, there is a tremendous dissociation in that kind of medium of royalty compensation for authors and the manufacturing and distribution costs of the physical item itself. I think that this will create many difficult problems, and initially, public domain material will be used to fill those discs with huge amounts of information. Pirated editions are likely to become a problem. While reproduction may involve fairly expensive machines, as with phonograph records, there will be many people with such devices. Because of the volume of information that can be obtained from one of these devices, it seems to me that there are some really sticky questions here — much stickier than the photocopying question.

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Response

I was very impressed with the demonstration of the technology presented by Bruce Sherwood and I suspect that others were, too. Before we acquire PLATO terminals for our libraries and place our first order for video disc equipment, however, I would like to suggest that there are certain assumptions we should question.

My reactions are based on both notes I took from the outline of Sherwood's presentation given to me when I arrived yesterday, and notes taken during his presentation. My remarks will cover three areas. First, I will address that part of his presentation dealing with video discs; then I will offer a few ideas about education, about philosophies of society, and about how people learn, think and interact with one another. I will then attempt to tie these philosophies to the third part of my response, dealing with PLATO as a communication device (among other interactive electronic media) or as a specific medium that should facilitate the betterment of humankind.

I would like each of you to consider the following questions. How can you apply PLATO in your library? How can you, with a tool as powerful as PLATO, provide learning not only through drills, but at higher intellectual levels of study as well? Make the transition, if you will, to video discs — or to any kind of an information storage system that permits you to intermix sound, motion and still visuals, plus other kinds of information that were not mentioned. How will you apply these tools in your library? Answer the following question honestly. Are you presently applying current technologies of motion picture storage, still information storage or audio information storage? Based on my experiences with libraries, I am not optimistic that libraries are ready for PLATO — and they are certainly not ready for video discs.

In speeches given throughout the country, video disc production has been billed as a very low-cost, paperback approach to motion visuals and other kinds of information distribution. The prices that Sherwood has quoted and the prices that appear in print represent only the cost of production of the physical item, i.e. the disc itself. The costs that are incurred in the actual production of the average one-half hour, 16mm sound motion picture for the educational market account for only 60-70 percent of that motion picture sale price. A major portion of the cost of the film is the scripting, the production, the filming — everything that must be done prior to the release of the print. Therefore, one must add the cost of content production to the video disc cost and that raises the price to some extent. Admittedly, video discs can be produced for much less than 16mm sound films, but the $25 print of *Gone With the Wind* will still not be available for a very long time.

I would like to question another item, but I lack the technical expertise to answer my own question. We have discussed the use of video discs as a storage device for the printed page. It is well known that existing television technology, including the technology of the video discs, has a limited number of lines of resolutions per inch. If we assume that a television set with excellent resolution will give 550 lines of resolution per inch, how many technologists will settle for only 500 lines of resolution per inch on a microfilm reader? Therefore, as Sherwood has indicated, it will be necessary to use multiple frames of that disc to store one printed page. Why not use video discs or currently available, low-cost magnetic storage devices for storage of digital information?

The point I wish to make is that we are not making use of the options now available. I would suggest that at this conference, we should consider how we can apply existing options first, so that we will be prepared for video disc and PLATO. I am certain that many other innovative technologies can be identified that will be extremely significant in the future of library and information services.

I would like to reflect for a moment on a few comments I made based on notes given to me by Sherwood, since they relate to the basic philosophy of this conference. I asked myself why I, as an educational technologist and a library information agencies specialist, am concerned with PLATO. If we can assume that all of human behavior is based on learning as a result of experience, then I would speculate that libraries and information programs are concerned with that process. Libraries will support the human enterprise, i.e. learning. How do libraries support learning? How do we obtain and utilize information? At issue here is not only the storage, management and retrieval of information, but the ability to utilize that information to help solve the recreational, instructional, inventive, or other problems of humankind, as well. That is really the name of the game.

Our society continues to demand independence of the individual. Throughout this bicentennial period, we have often attempted to review the goals of independence. But look closely at what we really have: it is a dependence which is really an interdependence. Our libraries, I think, are philosophically based on the concept of intellectual interdependence. We try to use the intellectual products of others as we interact on the intellectual plane in order to solve problems, to invent, to learn, and to direct our behavior.

Sherwood has shown us only one interactive medium, i.e. PLATO. It is probably one of the most powerful teaching machines that has come into existence in a good number of years. PLATO is also one of the most fascinating teaching devices, because so very few of us have had the experience in our own schooling of learning from a "teacher" such as PLATO. Remember, however, that the content of PLATO is no better than the teacher's input into it; PLATO is only a machine, like Skinner's box for the pigeon, and can do nothing more than its human input enables it to do.

The question for libraries, therefore (and for myself, in educational technology), is: When are we going to learn to be as skillful as Sherwood and his colleagues in putting things into that box? If we do not develop that kind of skill, will we be willing to depend on others to feed information into the machine in order to communicate and learn? I am not yet ready to answer that question. I feel that, in today's presentation, the stress was basically on the medium itself, on PLATO as an interactive computer system. We still need to examine its intellectual content. I am undoubtedly as guilty as many of you in focusing attention on the medium itself rather than on the content of that medium; think about that. Our concern is really for the information. Because the computer is such a massive filing system and is so flexible in its ability to access and to present information, we have the opportunity to learn by using a programmed computer textbook in a scrambled manner, just as Sherwood has done with PLATO. The surface of a large table could probably be covered with printed pages dealing with that one program; but this learning can be done with other devices. The medium that is best suited for the presentations that Sherwood gave us is tied electronically to this little screen as a computer.

Since Sherwood has written on the subject, I would like him to react to the related issue of cost-effectiveness. Consider PLATO in a public library setting, where it gives tutorial help to a high school student who wants to repair his car, or to an individual who wants to learn how to grow petunias. How does this compare from a cost-effectiveness standpoint (if it could be measured) to some other existing media which can do the same things?

While we are considering the public library — and I refer here only to the nonschool, noninstitutional library — I will pose another question. As the public library becomes more involved in direct teaching and increasingly supportive of alternative education programs (especially with the availability of powerful tools such as PLATO), will a conflict develop between public libraries and institutions such as universities, whose livelihood is based on enrollment? Will public libraries draw students away from the schools? I have purposely overstated this case in order to elicit reaction. This problem is a concern in many states. For instance, in some states, the university budget authorizations are based on the number of students on campus. As students begin to have options other than the campus for training in higher education, enrollments may decrease.

Another issue should be raised, although Sherwood surprisingly did not mention it. This relates to something on the horizon not only in education, but in dealing with the microcomputer systems. Today we are dealing with a megasystem that is horrendous. The computer capabilities you have seen here are greater than any of us will ever have available to our libraries. Libraries will have to buy computer support from sources elsewhere. Not too long ago, however, minicomputers came on the market. Some of you may have minicomputers in your libraries functioning as management support systems. Some of those minicomputers can be used for computer-assisted instruction. The minicomputer is an alternative medium, and can be programmed just as well as PLATO is programmed. Given enough direction, the minicomputer will do as much work as PLATO.

What about minicomputers or, more specifically, microcomputers? I have not had any experience with microcomputers, but last week I was asked for my reactions to a paper to be presented at a conference to be held in 1977. In particular, I was asked about microcomputers and their applications in educational activities. Although I do not know anything about them, I do know that some of the media in the new technology are extremely small and can be hooked to keyboards — their potential is great. Perhaps Sherwood has the kind of background that can help us look at the uses of the minicomputer in the learning experience.

To the administrators attending this conference, I would recommend consideration of the problem of administrative support relative to the care and the feeding of PLATO. Who should be hired? What kinds of people should be hired? How many graduates of the ALA-accredited programs of librarianship are going to know how to handle this kind of tool? I don't know. In fact, I doubt that the Ph.D. graduate from the finest institution is yet ready to handle this tool. This fact scares me. If we are going to place these devices in the library for direct teaching purposes and for development by librarians, then we as administrators must know what is in that system, and for what we are responsible.

In closing, I would like to comment very briefly on copyright. Computer programs are, in fact, now accepted for copyright registration. This is a result of a 1971 amendment that grants copyright protection to recordings.

These comments represent fairly well my reactions to Sherwood's excellent presentation. The power of the technology that we have with us now is awesome, and I hope that we can continue to develop our ability to utilize it.

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Project: Knowledge 2000

P*roject: Knowledge 2000,* a conference organized by the National Science Foundation, was a unique event as well as an experiment. This was the first time that the foundation, essentially a grant-awarding agency, assumed the responsibility for creating and executing a program that it had originated. It was an attempt to discover, if possible, the knowledge needs and requirements for the country in the next twenty-five years — by the year 2001. Knowledge was defined in the broadest sense: as information organized so as to influence decision-making and to improve the decision-making process.

The conference was held in the new, $60 million Xerox facility in Leesburg, Virginia, which serves as a training center for their management, sales and service personnel. It houses the most up-to-date closed-circuit television facilities in the world. This fact proved to be very advantageous in that two of the primary products for the Knowledge 2000 project were video cassettes and video tapes which were to be used in the place of print products as discussion guides.

Between 125 and 150 people were assembled for the project. Although it was expected that there would be a high degree of interaction, it was generally accepted that the reasons for attending the conference would vary: (1) conferences break the normal routine; (2) they provide a locale to renew old friendships, make new friends and socialize (and it is my guess that more communication occurs in the social sphere than in the formal professional one); and (3) conferences provide exposure, however brief, to some new ideas. It is a very secure feeling to be able to return home with one's briefcase full of papers that may never be read.

For this project, we broke away from the usual format for such conferences. A panel of four persons met in the television studio daily and addressed the particular topic of the day. Each panelist had some specialization in the particular field. The first forum, held in January 1976, considered the need for knowledge, largely in terms of research material; another forum, held in June 1976, discussed the communication of knowledge. Each person related his/her topic both to the needs of the next twenty-five years and to what could be anticipated.

In addition to the four people in the television studio, six team rooms were set aside in which relatively discrete generic (if you will pardon the expression) groups of people were assembled: (1) people from the academic community; (2) administrators and professionals; (3) the knowledge industry representatives, e.g., from McGraw-Hill and Time-Life — people whose job it is to communicate various kinds of knowledge; (4) federal government personnel; (5) state and local government personnel, including legislative and judicial persons; and (6) the public advocacy or public interest group, made up primarily of representatives from the League of Women Voters, Common Cause, etc. For the first hour, the panel in the television studio would address a particular topic. After a break, team representatives (not team leaders) would reconvene with the four panelists to discuss various points of view that had been generated in the team rooms.

As expected, there were some failures and some successes. One failure concerned the process itself. Immediate conflict arose in distinguishing between panel members and team members; everyone wanted to be on television. We also observed something I believe to be illustrative of our society: this group of decision-makers, representative of various sectors of society, continually talked past each other, did not listen to what others had to say, digested little of what was said, and each busily prepared his/her agenda while someone else was talking. This factor provided many insights into the problem of communication.

Possibly the worst problem was the high level of frustration — the result of the many ideas generated at the conference. It was difficult to grasp and retain any one idea for more than a few minutes, because the next idea demanded attention before the first could be noted on paper. It seems that this frustration was generated not only by the amount of material, but by the fact that television is still largely a mechanism projecting only in a superficial way. Diligent effort will be required before television can be used for in-depth communication of material. This may be attributed, in part, to the transition from a print to a video culture, and circumstances may therefore change in the future.

Some of the ideas generated at the conference may not be new to you. Gabriel Almond, a political scientist at Stanford University, spoke about two kinds of movements in society: cyclical and noncyclical (i.e. moving along a spectrum from a sacred to a secular society). From Almond's point of view, the cyclical movement is event-related. A recent example of cyclical movement would be the Great Depression of the 1930s, during which, as part of the cycle, people were psychologically depressed as well as economically depressed. Watergate, however, is considered a noncyclical movement, and thus may be dismissed (according to this view) because such movements are somewhat ephemeral.

The noncyclical movement — the spectrum conventionally used by sociologists to indicate the movement from a sacred to a secular society — appears to be much more important. In a sacred society, religion and family are the traditional vehicles of indoctrination and socialization. In the past, both institutional and individual roles have been ascribed by religion and family; each was assumed to play a particular role. Almond believes that as we move toward secular societies, communication and education play more important roles than either religion or family in the socialization or indoctrination of children. This concept is applicable to libraries and other institutions in our complex society. As we approach the secular society, the emphasis on communication, performance and legitimacy will become a factor of crucial importance. In other words, institutions that do not perform will not be considered legitimate, and such organizations (e.g., American Red Cross, Boy Scouts of America, and libraries) will no longer hold their place in society unless they can perform. It is thus not what has been done for me in the past but what can be done for me now that will be important.

Project discussion groups believed that certain types of knowledge were needed. First, it was believed that most of the knowledge needed in the next twenty-five years would be largely nontechnological, or intuitive. How can intuitive knowledge be enhanced? A surprising amount of the discussion dealt with intuitive knowledge — how to reach it, treat it, use it. I suspect that intuitive knowledge is taken for granted much more than it should be.

Another recurrent theme of the sessions concerned how to obtain knowledge that would increase public participation. What kind of knowledge is needed to make institutions self-corrective? At issue again is the self-corrective concept, the search for knowledge to empower the powerless — a most difficult kind of redistribution process.

We need to have some knowledge about the incentives necessary to use the present information systems available. What are those incentives? Don Michael, affiliated with the Center for Research and the Utilization of Knowledge at the University of Michigan, asserted that it is simply not true that created knowledge will be used knowledge. Any librarian at the smallest branch library in America knows this. The major problem appears to be how to create situations in which knowledge will be used. The public will not necessarily beat a path to the door of the person who builds a better mousetrap.

Robert Hoffman, a professor of the Wilson School of Public Affairs, made what might be considered an indictment of our society when he expressed concern about the burden being placed on knowledge, i.e. that few societies have been given the "state of knowledge" we have. Upon reflection, this is a terribly important consideration — that we do give such weight to the operation of our society and the distribution and utilization of that knowledge. We are forced to ask: Are we doing as well as we can?

One of the participants in the project, Doug Cater talked about the future of communications. He went through many tapes generated at the project looking for things that had to do with information systems and with communication in particular. Because it is of possible relevance for librarians, I will relate one point that he raised which I have no way of substantiating, but which seems to ring true. The Aspen Institute, of which Cater is the director, is in Menlo Park, California, and its staff works with Stanford research personnel. One Stanford demographer estimated that over one-half of our labor force is currently involved with the manipulation of symbols or words. This is a significant number of people, and among them, librarians are the Madison Avenue word-pushers. Because the process of manipulating symbols and words requires little consumption of energy and raw materials, there may be no limit to the heights to which these processes might go. The point that Cater was trying to make is that conceivably 95-98 percent of our GNP could be employed in this passing of symbols within the next few decades.

Cater also spoke of the need to correct some trends. One with which I am sure you can all identify is the ever-increasing rate of the growth of technology; of particular concern, because of the economics of it, is the trend toward its concentration, whether in multinational corporations or in government. In other words, the economics of scale makes it relatively easy to have large concentrations of technology, which has some inherent danger. Control, for instance, comes from the fact that knowledge is power. It has a tendency to create its own hierarchies within (or outside of) which people work.

Another point that was made during the discussion was that in the field of communications, the consumer usually does not pay for the cost of the product. Books are probably the least subsidized form of communication; when you buy a book, you are generally paying for the cost of that book. You do not, however, pay for the cost of a television show, because those costs are subsidized in various ways.

There was discussion about the information outlaw and two different forms of improper use of information. In the old computerized information systems, the information outlaw could use illegally obtained information that was not leased for use. The other form, which I think has various connotations, is the antisocial effect of communications. One example is gratuitous violence, what we know as violence for its own sake, such as that found on television. The point here is that it is one thing for people to go to the theater and pay to see violence, but it is quite another thing to have violence beamed into one's house. At some point the information outlaw becomes truly antisocial in his use of things created for a totally different purpose.

Another discussion point that was raised centered around the ownership of knowledge and the role of telecopiers, computers, xerography, etc. The use of copyright is becoming obsolete. It may well be that events in the field will be accelerating at such a rapid rate that the new copyright legislation may be outdated by the time it is enacted and implemented. I suppose, however, that some sort of technological metering is needed as a copyright control against people who take the things that have been generated illegally. It was suggested as part of this concentration syndrome that we should strive to obtain more producers or packagers of knowledge; this idea would have relevance for libraries. I will not attempt to pursue this further, because the matter is linked to the problem of reaching the outer limits to which an advertising economy can subsidize communication systems.

Another topic raised was a concept that originated with Willis Harmon of the Stanford Research Institute. Harmon refers to dilemmas for which there are no right answers. I will discuss just one of these dilemmas. Industrialized societies face a growth dilemma; industrialized society needs continued growth for a viable economy. It becomes more and more clear, however, that society cannot tolerate that growth in terms of environmental regulation, energy and material shortage. Given the impact on the life support systems of the deteriorating ozone layer, we are replacing human physical labor with energy-consuming machines. Where does it stop? There does not appear to be a clear answer.

Harmon made the point that our contemporary society is tied into jobs and employment. There are only three kinds of legitimate societal roles: (1) those people who have a job, (2) those people who are married to people who have a job, and (3) those people who are educating themselves to get a job. This is an interesting concept to consider in the sense that neither the

107

elderly nor the young have a legitimate role — and the uneducated certainly do not. Thus, the question essentially becomes: If we have only three kinds of legitimate societal roles, and if our industrialized society continues to produce more and consequently to employ fewer people, what will the long-term effect be? The following story gives an example of an astounding statistic which I believe is an index of this problem. You may be aware that the Pepsi-Cola Corporation made a business deal with the Soviet government to sell Pepsi in the USSR in exchange for their sale of Russian vodka in the United States. The first of five Pepsi-Cola plants opened in the Soviet Union and produces 60 million colas *every year* with only 85 employees. I think it is ironic that these figures come from the Soviet Union, but this will become increasingly common as new plants with comparable advancements replace some of our own older plants.

The paradigm shift has been discussed here frequently, but I suspect that no one has spent too much time on it. It is somewhat abstract, but I believe that one thing we should be aware of is that a value shift is occurring — and I do not think that we will value efficiency in the future as much as we have in the past. I think that we will be doing things and creating jobs that are not as efficient in order to give people things to do. I do not know how much longer productivity can continue to be the name of the game.

A topic continually raised by all the groups in Project: Knowledge 2000 was the issue of values, i.e. the role of values in the decision-making process. I wonder if it would have been nearly as intensive a subject a few years ago. I think there has been a consciousness-raising process in the whole area of values — what they are, how we use them, how we acquire them, how we discard them. In terms of the paradigm shift, part of the prediction deals with this value-shift of assumptions. There is a new analogy which might be useful in thinking about this approach to paradigm-shift. Ten years ago, earthquakes were thought to be discrete, isolated, upward thrusts of the earth's crust in order to relieve some pressure. As long as this was the overriding assumption (which is essentially what a paradigm is — a perspective or assumption), i.e. that the earth worked in a random, upward-thrust way, no one could seem to understand how or why earthquakes occurred. As a result of research performed largely by NSF grant recipients, the field of plate tectonics has been discovered. This discovery, in a sense, did away with the old paradigm and created a new one. It states that large plates move laterally, and in the course of doing so have an upward as well as a downward thrust. By plotting these movements around the world, two significant conclusions have been reached: (1) the historically important continental drift theory is confirmed; and (2) plate tectonics enables prediction not only of where earthquakes will occur, but when. As assumptions become reinforced through thinking and sharing ideas, we produce a new set of assumptions which permit us to look at the old activities in new ways and thus allow greater insight into this particular kind of earth mechanics. I will not discuss the paradigm shift further, but this example serves as an analogy to the makeup of this shift.

Finally, I would like to make some points which are responsive to the fact that we live in a period of extensive, rapid change. What are some of the things we can do, particularly as affiliates of institutions? First, solutions should be viewed as temporary and continuously open to amendment. That may sound very simple, but is often terribly difficult because we have a way of setting things in concrete once we begin instituting solutions. If we can view solutions as temporary while we are instituting them, however, we have taken a long step. Secondly, decisions should be made which are flexible enough to be useful and productive in more than one social configuration. We should also experiment with innovations that provide the mechanics around which broader courses may mobilize and which, at the same time, legitimatize failure (which has not been a distinctive part of our society).

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Response

I have been much taken with the high quality of word play at this conference. "Paradigm Lost" is sheer genius, as is George Bonn's "Foresight Saga." A story occurred to me as a result of all this talk about the future; it concerns the futurist writers. Some time ago, the crime writers of America got together and decided that they needed a motto. After they brainstormed awhile, they coined the phrase "Crime doesn't pay . . . enough." This phrase so successfully insinuated the need for better remuneration for crime writers that the science fiction writers became envious and decided that they, too, needed a motto. They put their heads together and decided on: "The future isn't what it used to be."

My participation in these sessions has convinced me that this particular line, "the future isn't what it used to be," is becoming more and more apt. We have all been trying to see what the future holds, and I am afraid that most of us are not quite sure that it is what we once imagined or hoped it would be. I have been told that Arthur Miller in his new play has used the line, "For Americans the past is a rumor." There is probably a counterpart saying dealing with the future, but I leave it to you to invent.

I want to begin my remarks with a disclaimer. My comments here are bound to be quite disjointed and may not always deal directly with what Lynn Carroll has said. I only met Carroll last night and just read an outline of his talk at breakfast. I made copious notes as he talked, and I hope that my remarks will relate to what he has said. It seems to me that his presentation forms a useful bridge among the various discussions that have taken place thus far.

We have heard much about technology, and Carroll has illustrated how technology has been used to display ideas. I think, however, we do want to get back to ideas. We should, if possible, try to see how the many ideas we have heard relate to the alleged theme of this session: the humanities, use of leisure time, and morals. I do not think that any of us is ever very comfortable in dealing with moral and ethical issues. I certainly am not, and do not plan to say much about them, but I will try to work them in as I go along.

One of the thoughts that occurred to me about libraries and the humanities is that much of the technology that has been and is being developed for libraries seems to be better able to serve the needs of science and technology than of the humanities and the social sciences. I am not quite sure what the implications of this may be, but I am a bit worried about it. One example of this phenomenon is that, for years, we have been devoting a growing percentage of our acquisitions funds to periodical literature, and particularly to journals in science and technology. A lesser portion of the budget has been allocated to other fields; consequently, a diminishing amount of money has been allocated for monographs and other materials that serve the more bookish fields of history, philosophy and the humanities. Where this trend will end, I am not certain, but I think we may have supported the sciences in university libraries for many years at the expense of the humanities.

Jesse Shera once wrote an article entitled "How Much is a Physicist's Inertia Worth?"[1] He wrote about the expense of maintaining and providing departmental libraries to accommodate the physicist who had only to walk down the hall to get the literature he needed, in contrast to the historians and the humanists, who had to use the central library to find their resources. I think that this concern about how we spend our money — our institution's money — is analogous to that earlier argument about centralization and decentralization. Although people like Hugh Atkinson tell us that arguments about centralization or decentralization of library resources will be irrelevant in the new electronic future, we still have much money to spend now for materials in academic libraries. We must be more careful and understand how we are spending our funds and why. We need to find ways to involve more people in the process, i.e. more people than are currently involved.

Kenneth Thompson talked about the necessity of finding better ways to integrate research and teaching. We have heard echoes of this idea in subsequent presentations at this conference. As I think about the future of universities and of their libraries, it seems possible that the research capacities of universities may be oriented differently in the future than they have been in the immediate past. In many universities, for instance, the number of unemployable Ph.D.s is already forcing the curtailment of doctoral programs. A recent issue of *Chronicle of Higher Education* indicated that Louisiana had joined New York State in ending a number of doctoral programs.[2] One result of this kind of policy may be that university-sponsored research will be increasingly undertaken not by graduate students and faculty members, but by postdoctoral fellows and research specialists. Without graduate students to carry part of the teaching load, there will be a major shift in the lifestyle of universities. This may in turn result in some redistribution of funds that university libraries expend for instructional versus research materials.

I would like to comment, too, on some other educational trends. The trend in this country toward universal higher education may mean that most of our people will soon be "degreed." When this occurs, the emphasis will inevitably shift toward in-service training. Indeed, it is already apparent that there is a bullish market in continuing education with implications for libraries that are only now beginning to be understood. Academic libraries are not presently organized for outreach services, but they should investigate alliances with public libraries and other agencies in order to overcome obstacles to the effective delivery of library and information services to off-campus students and groups. This possibility has been mentioned, but it has also been suggested that competition may develop among different types of libraries. That is a luxury we cannot afford. What is needed is cooperation between academic libraries, which may in some cases have the necessary resources, and public libraries, which in most cases have the necessary staff skills and experience to meet these new community needs.

Another problem that libraries may be expected to address is the integration of research and teaching. As a nation we have rightly paid attention to research, but we have not paid comparable attention to the process of diffusion. Carroll has told us how much money the National Science Foundation spends on research, and I think we should ask the complementary question of how this research reaches society and produces whatever benefits might flow from it. The knowledge gained from research has not always been disseminated in the most useful forms. The mere preparation of research reports is not sufficient. Better ways must be found to bring the benefits of research to society, and at this point libraries may find themselves in an altered role. Obviously, some techniques that have been demonstrated and discussed here may play an important part in the future. How can these newly-created tools be used by libraries to meet very heavy mass needs? It seems clear to me that the whole process of the creation and distribution of scholarly knowledge is currently subject to tremendous strain, and it also seems inevitable that great changes will soon alter the ways in which information is produced and disseminated.

In that connection, some comments about Sherwood's presentation of the PLATO system seem appropriate. I might note here that last week, partly in preparation for this session and partly at the insistence of one of my colleagues at the University of Connecticut, I went to the university's Health Center in Farmington — forty miles away from the main campus — to learn what is being done with computer-assisted instruction. Among other things, a number of PLATO terminals are being used by the students in the medical and dental schools. After seeing Sherwood's demonstration, I have a few thoughts on this. (Incidentally, I decided to summon up a lesson on PLATO to see what I could do with it; I did not do well.) The power and promise of PLATO and other interactive media are impressive, but I see some possible problems of equity in their use. Just as the major share of our investment in abstracting and indexing services and on-line bibliographical systems has been devoted to the literature of science and technology, so, I suspect, will the principal efforts to provide courseware for interactive systems be devoted to scientific and technical fields. I do not mean to revive the "two cultures" argument, but I feel that the "have-not" disciplines (history and the other humanities) and, to a lesser extent, the social sciences will not soon share proportionately the benefits that these systems offer.

Another problem may occur with the development of courseware for these systems. It seems clear that the fashioning of effective courses should not be left entirely to the entrepreneurs. Talented faculty members must be involved along with those who have the graphic and visual skills to help make the teacher's knowledge come alive. A dilemma arises for the college and university teacher who takes time to assist in producing good courseware, however. The academic reward system, at least at present, does not place a high premium on such activity. "Publish or perish" is still a way of life, and despite evidence of change, the college professor will still find it safer to work on a book or article than on interactive courses, if he or she is seeking promotion or tenure. This could change and probably should, but until it does it may be a serious barrier to the creation and availability of a wide range of effective courseware. Of course, Brong knows more about this than I do, but it is an observation I felt should be made here.

There have been a number of references throughout the conference to copyright and the effect of copyright on the software used in interactive systems. It is by no means certain that the new copyright law is clear about this question. The fact that the law is not clear may be inferred from the establishment of the Commission on the New Technological Uses of Copyrighted Works which will grapple with some of the implications of these techniques. I think it is important to bear in mind that the new copyright law does not go into effect until January 1978, so we have some time to prepare for future fallout. It has been suggested that there might be a road-show on copyright implications, which will be good as long as all of the constituencies are adequately represented.

The particular copyright arguments going on between publishers and authors on the one hand and libraries on the other is really a conflict between two goods. Copyright is clearly necessary and beneficial to the creation of new knowledge, or to the provision of an incentive for the creation of it; however, copyright was designed to promote the dissemination of new knowledge, and librarians who have been arguing for freedom of access to information had hoped to achieve it without undue penalty to those who created the knowledge. The authors and publishers have very skillfully manipulated the argument and made it appear that libraries were participating in a big ripoff of starving authors and poets and depriving them of their livelihood. The fact of the matter is that nobody buys poetry except libraries, and libraries by and large do not photocopy it. Libraries photocopy quite different things — scientific and technical articles, for example. A good case can be made for generous photocopying rights when: (1) an article has been produced as a result of government-sponsored research; (2) an article is published through a subsidy in the form of page charges from a grant-making agency; and (3) the motive of the author is to disseminate the results of this research and not to gain profit from royalties (indeed, he probably doesn't even hold the copyright; the journal publisher does). Thus, it was ludicrous when publishers gathered people like Art Buchwald, Irving Stone, Barbara Tuchman, and Kurt Vonnegut (all millionaires) at a legislative reception, and then tried to convince Congress that authors are suffering and that librarians are responsible. What is most interesting to me is that it didn't work. All the power and influence of these people — who have access to the media — was not sufficient to persuade Congress to pass a law which would seriously inhibit the public's access to information. The voices of librarians, and of the societies and the associations to which they belong, finally prevailed, and in the eleventh hour secured a compromise bill from the House subcommittee dealing with copyright. I think that it is a credit to librarianship and to our democratic system.

During the copyright debate I was executive director of the Association of Research Libraries in Washington, D.C., and I wrote a letter to Senator McClellan that I hoped would have some effect on the Senate subcommittee that was dealing with copyright. The letter did not actually make any points with the Senate, but one of the things I said in it touches on the question of pay libraries. There is a real policy issue here about information. Carroll alluded to knowledge power, and information is unquestionably equivalent to power. That is the idea I tried to convey to Senator McClellan in my letter:

> In our technological society there can be no doubt that information is the equivalent of power — economic power, political power, and intellectual power. Information is the essence of education and it is as desirable that the citizens of this country have free access to information through a healthy and unencumbered system of libraries as it is that each person have access to a good education at public expense. But information, like education, is costly, and not every citizen is equally able to afford it. It is crucial therefore that information be viewed as a national resource to be used for the benefit of all and not as a commodity to be sold to the highest bidder. To repeat, there is a public interest in information and that interest must be preserved and safeguarded from those who would profit from every citizen's natural desire to enjoy the economic, political and social benefits that information can bestow.

I would like to comment on another topic discussed at this conference. Given the tendency of any organization or bureaucracy to adhere to the status quo, do librarians do much, if anything, to effect change? I believe that they can, and in academic libraries, for instance, there are literally dozens of examples to prove it. As executive director of the Association of Research Libraries, I worked closely with the Office of University Library Management Studies administered by the association. That office is supported by a Council on Library Resources grant. One of the principal achievements of that office was the development and application of the Management, Review and Analysis Program (MRAP), presently being applied in more than twenty large research libraries. MRAP is a guided self-study technique for evaluating and exploring management practices at all levels, and for bringing about constructive change based upon the findings of the self-study. Management practices at all levels, from the director down to the departmental level, are examined. Every policy is scrutinized; committee structure is studied, and communications systems are tested. Staff at all levels are involved in the process and the resulting changes ensure future staff participation in decision-making, particularly those decisions which affect staff members directly and personally. MRAP has been fully described in the literature, and it is hoped that the knowledge that has been gained from the application of this program in large libraries can be modified and used in smaller libraries. The process was applied and implemented, among other places, at the University of Connecticut libraries. It seems to me that the results, at least in our situation, have been extremely fruitful. The staff believe that change can be brought about partly through their own efforts, and therefore they want some access to decision-making. Staff members have an increasing sense of self-worth, and one of the greatest benefits, as I see it, is the surprising strengths which are revealed once people are permitted to assert themselves. Unless this kind of change takes place in libraries, people will be pigeonholed and categorized and their qualities may never be appreciated, understood or utilized.

In the debate about leisure time and its uses in our society, it seems that there are a number of countervailing forces. Although workweeks are apparently shorter for many people, there is a growing tendency among this same group to use newly available time for moonlighting. This may in part be a response to the economic situation, including the effects of inflation, but it may also be a response to the uncertainty of how to use available time — or it might simply be disenchantment with the nature of many leisure-time activities. On the other hand, many professionals and administrators seem to have less leisure time rather than more. Academic people, who are believed to have a soft life with vast stretches of time for deep thought, seem rather to be busier than ever, so much so that they may not now be doing enough thinking of any kind, deep or otherwise.

A third observation has to do with what I think is a somewhat new spirit among young people, born perhaps of student activism (even though it no longer takes the same form). I am speaking here of involvement — sometimes real commitment, but often just healthy activity of one kind or another. Consumer advocacy, political involvement, environmental awareness, outdoor activities such as backpacking and bicycling rather than spectator sports — all of these and more seem to be responses to additional leisure time. This might be called constructive leisure and seems to be a positive new element.

Kenneth Thompson brought up what appears to be the makings of a substantial debate on the subject of morals and ethics, i.e. whether they can or should be taught in universities. He mentioned Paul Freund, and I noticed that in the latest issue of *Change* magazine, Derek Bok, the president of Harvard, has written an article entitled "Can Ethics be Taught?" In short, Bok joins Freund in supporting the notion that morals and ethics can be taught in universities, and he very clearly feels that they should be. Bok concludes his article as follows — and I will make this the end of my presentation:

> But is the effort [to teach ethics] worth making? I firmly believe that it is. Even if courses in applied ethics turned out to have no effect whatsoever on the moral development of our students, they would still make a contribution. There is value to be gained from any course that forces students to think carefully and rigorously about complex human problems. The growth of such courses will also encourage professors to give more systematic study and thought to a wide range of contemporary moral issues. Now that society is expressing greater concern about ethics in the professions and in public life, work of this kind is badly needed, for it is surprising how little serious, informed writing has been devoted even to such pervasive moral issues as lying and deception. But beyond these advantages, one must certainly hope that courses on ethical problems will affect the lives and thought of students. We cannot be certain of the impact these courses will have. But certainty has never been the criterion for educational decisions. Every professor knows that much of the information conveyed in the classroom will soon be forgotten. The willingness to continue teaching rests on an act of faith that students will retain a useful conceptual framework, a helpful approach to the subject, a valuable method of analysis, or some other intangible residue of intellectual value. Much the same is true of courses on ethical problems. Although the point is still unproved, it does seem plausible to suppose that the students in these courses will become more alert in perceiving ethical issues, more aware of the reasons underlying moral principles, and more equipped to reason carefully in applying these principles to concrete cases. Will they behave more ethically? We may never know. But surely the experiment is worth trying, for the goal has never been more important to the quality of the society in which we live.[3]

This is a trend. It is one that will deeply affect libraries of all types, and it is one that we should all watch and observe carefully.

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Education in America: The Next Twenty-five Years

I am very pleased and very happy to be with this group because of my long-standing respect and appreciation for librarians. You cannot begin to work on hundreds of publications — many of them research-oriented — without being aware of the kind of selfless dedication that I have always associated with librarians. I would like to share with you some general information about the future which I think is of common importance not only to librarians, but to persons in all lines of work. I hope that you will make allowances for some of the gaps in my knowledge with respect to the future as it pertains to library science. I will begin by reviewing my own experiences in the field of future studies.

I would like to share with you particularly the past five extremely exciting years of my life. During that time I had a chance to work on a volume entitled *Educational Significance of the Future,* which is based on interviews with people such as Willis Harmon, personnel at the RAND Corporation, and others. I will also digress a bit and discuss some of the insight I gained on various questions about moral values in the future while working for a foundation in St. Louis. Finally, I will discuss something of great interest to me in the last year: the National Education Association (NEA) bicentennial project on which I had a chance to work. This project was an attempt not only to revise the seven cardinal principles of education in order to accommodate a new century, but also to probe the minds of approximately fifty distinguished world citizens for answers to three questions: What is your image of the world in the next twenty to twenty-five years? What are some of the educational responsibilities and imperatives that will confront an educator in the next twenty-five years? Do the old cardinal principles, where they hold membership and are still valid, help to command the fundamental processes? I will slight that last question because a 16-page special section of *Today's Education* summarized the research, and NEA is publishing my book called *Curriculum Change Toward the 21st Century,* on possible changes in the structure, goals and processes in American education.

This is preamble, however, and without intending to patronize, and recognizing that I have much to learn in the field myself, I would like to share with you some of the things I learned about the methodical study of the future. I will then shift my discussion to the images of tomorrow's world and their implications for persons in education, especially those in the field of library science. This is a big order and the problem is not whether I will succeed, but how closely I will escape failure to cover these various points in an hour's time.

Incidentally, I would like to justify the way in which I have turned outside the profession to persons like Norman Cousins, Helvi Sipilä (the head of the Women's International Year), Elise Boulding and many others in my inquiries this last year. Back home in Indiana, we tell a story about an interesting event that occurred in Kokomo. Monday through Friday, always shortly before noon, the telephone company received a phone call from a male voice asking for the time. Of course, in the informal atmosphere of a relatively small town, the ladies and gentlemen on duty wondered who was so invariably interested five days a week in the time of day. Finally the supervisor, emboldened by curiosity, asked the caller if he would mind explaining why he always asked for the time. The Hoosier voice, in its rich accents, said, "I'm Bill Smith over at the Kokomo Box Factory and it's my duty to blow the noon whistle just on time, and everybody knows the telephone company has the right time." As he listened for a moment for a rejoinder, the supervisor's voice came over in a strangled fashion and said, "Sweet Jesus, we have been setting our clock by your whistle for twenty years!" That is supposed to be a true story, but my point, lest you forget the point and remember the story (which would be a catastrophe in terms of any intelligence of my message), is this: sometimes, in the field of education, we tend to talk to one another — to set our own clocks, so to speak, by one another's clocks. That is one reason why, in looking ahead twenty years or so, I felt it made sense not only to interview some outstanding educationists such as Ben Bloom and Bob Havighurst, but also to see what the David Rockefellers, the Sir Walter Perrys (who currently have in the Open University probably the most important experiment in English education), and others had to say about the future.

Now I will turn back and plagiarize a title, *African Genesis,* in order to explain how I became interested in futures research. I supervised a project in the heartlands of Nigeria. One of our contracts was designed to see what could be done with primarily illiterate populations to accelerate the education so desperately needed in that area. One of the persons with whom I worked was a RAND employee. I had not then heard of futures research, and when he told me it was his specialty, I asked him to tell me a little bit about it. One of the really striking things that he told me was a story of how RAND, in the late 1950s, had answered the following question from the Air Force. The Air Force wondered what the result would be of an atomic or nuclear attack on the United States in the manner of Pearl Harbor. What would the devastation be, and what would happen to the people in the United States? In order to answer an unanswerable question, the RAND staff made some early forms of videotapes which portrayed, from different angles, the way a screen would look on a radar set as one moved from one distant early warning station to another. They accumulated about thirty tapes which recorded what people would have reported to the Supreme Air Command in Colorado if there had been a real attack. They did so on the basis of the blips that were simulated on the screen at the different centers — each one had to be different, of course, because of the different lines of flight. This information was then collected and given to the Supreme Air Command in Colorado, where it was announced that messages from the thirty centers would at some time be piped into the communication system as if they were taking place simultaneously. The Supreme Air Command personnel would then give orders indicating what counter-measures to take to stop the ICBMs, the planes, etc.

The results were worked out through probability analysis by computer, and they were pretty grim. RAND Corporation found that 57 million Americans would be killed in such a sneak attack. On the basis of more recent data which I received from a friend who is a brigadier at the Supreme Command, approximately 138 million Americans would be killed in such an attack now, regardless of what might be done to defend them. Moreover, this figure does not include the Mexicans and Canadians who might accidentally be hit by radiation.

This dramatic story really inspired me and I began to look around to see if I had been missing something all these years. I learned a number of interesting things, including the fact that futures studies began in the 1700s. Louis XIV, for example, uneasy about his teetering regime, commissioned his foreign minister to study what France could do to mediate or influence the future and maintain the royal family line. He came up with what he called "reason conjectures," and through his studies tried to establish: (1) with whom the French should make treaties, (2) to whom members of the noble family should be married, (3) who should be married to specific dukes, etc., in order to attract the largest number of allies with the largest number of soldiers who might then align themselves with the royal family. Unfortunately, he made a mistake that many futurists have made: he did not look for the exceptional, but merely a continuation of the status quo. He therefore made no attempt to anticipate the unexpected (such as the forthcoming French Revolution). Only the sans-culottes (the revolutionaries who plundered Versailles and found this interesting document in the strongbox) had a chance to study the report.

Modern futures studies began about 1942-43, although there is really no way of pinning down that date. It was before the war effort had reached its culmination that the event occurred that ended adolescence for humankind. At the University of Chicago, a group of the most able men and women were gathered to devise a mathematical model which would later be translated into the atomic bomb. About two years before Hiroshima, on the basis of their efforts to mediate and study the future, a group of Americans and others celebrated the fact that they had successfully exploded the first computerized model of an atomic bomb under the stands at Stagg Field. The model later became the bomb that first hit Hiroshima and later Nagasaki.

By this time I had become extremely enchanted with the matter of looking into the future. While reading an issue of *Educational Horizons,* I came across a phrase that I had never heard before, but which I thought was a marvelously descriptive term: "future shock." It is a term which is very familiar now, of course, but was then written by a virtually unknown author.

Having described this background, I will discuss four methodical developments in futures study that have occurred in the last fifteen years. Most attempts to look ahead in the early 1960s were based on a linear projection. Persons who studied the future at that time generally thought that the best approach was to begin with the present and decide how various trends (e.g., oil depletion, population trends) could be translated into an image of ten years hence, and what could be done in the meantime to adjust to it. By 1965, however, futurists began to think that this was not enough. They realized that there was not any single future, but that the future was fan-shaped and could take any of a variety of shapes, depending on our adjustment to it. For example, John Kennedy once said, "We *will* put a man on the moon"; this was a decision about the future which caused a particular future to be realized. Almost everything happens for a reason, and this is certainly a case in point. Between 1968 and 1970 futurists and thoughtful people were beginning to see that there was more to the study of the future than a fan-shaped future. They began to see that developments in the fields of physics, chemistry and other disciplines paralleled the things happening, for instance, in education. They saw that these developments overlapped and that we had what is called a "cross-impact situation." What was happening in holography, for example, was going to influence what was happening in education.

In early 1975 the NEA Bicentennial Planning Committee decided to review the seven basic random principles of education, and asked me to interview a variety of people to get their opinions and solidify this information. We gathered influential American educators, including Wilson Riles, the state superintendent from California; Ted Sizer, former dean at Harvard and head of the School of Andover; Louis Berman; and Alvin Loving, Sr.

We decided to ask those interviewed the three questions I mentioned earlier: What is the world going to be like? What does this mean for education? Are the old principles still valid? We also selected approximately 250 persons whose responses would be of interest to NEA, ranging from Muhammed Ali to Nobel prize-winners. Among those we actually worked with were people I have already mentioned (Helvi Sipilä, Elise Boulding, Norman Cousins); Patsy T. Mink, the congresswoman from Hawaii; Studs Terkel; Jonas Salk; Norman Lear; Raul Castro, governor of Arizona; John Johnson, editor and publisher of *Ebony;* and David Rockefeller. On the basis of the views of these persons, about eight or nine characteristics of the future in education were defined, to which I will now turn.

I am reminded of something that Will Rogers said about American schools back in the 1920s when I broached the topic of scholarly education with him: "The schools ain't what they used to be and they probably never was." As you look at the images of tomorrow, I think one might say that the "future ain't what it used to be and it probably never was," because we envisioned it in a totally different context in the 1930s and 1940s than we do now.

One of the first things that became very clear from the eighty hours of tape produced was the fact that we are, unfortunately, reaching the end of a hydrocarbon age and are not doing very much about it. We all know that we have major energy crises — that a child of two, by the time he reaches the end of eighth grade, might very well find himself in a land bereft of all natural gas and oil at today's consumption rates, if we are totally on our own resources. These consumption rates are fantastic. In 1975 we were using five barrels of oil for every one barrel we had used twenty years earlier. Of 18 billion barrels used daily, 10 billion are imported and imports are increasing at an alarming rate. Costs, of course, may go up between 5-10 percent and 30-40 percent, depending on how the oil-producing countries finally decide to handle the problem.

Because of the automobile, this is a world totally different from the one in which I grew up; today, many people cannot shop without one. Not only is the decline of the hydrocarbon age important because of the way our automobiles trap us, but also because of the way in which oil relates to America's agricultural mural. We are the only nation with any significant grain exports — far more than Australia, Argentina and Canada combined. In fact, one or two of our states produce more grain than all other exporting nations in the world. This agricultural miracle is based to a substantial degree on the use of petroleum-based fertilizers; thus, in a time when great hunger is in the offing (according to persons like Theodore Hesburgh, chairman of the board of World Development Corporation), we could have a double tragedy here. Americans are presently using three times the energy per capita of the Swiss, and twice the energy consumption of the West Germans. Although I doubt all of these facts are new to you, the total composite is pretty shocking.

A corollary of this is the fact that we are very probably faced with the need to contemplate a postextravagant society. I will not call it a postaffluent society, but I do think that ours will become more a postextravagant than a postindustrial society. This very clearly means that we can postpone and delay, with parsimony, some of the problems ahead of us, but we simply must develop a post-Pearl Harbor type of attack on the domestic problem of energy. It is a major issue that is downplayed by most politicians, I think, partly because of the present frustrating lack of any viable answers.

This postextravagant society is one in which there is a difficult and subtle psychological problem that arises in the classroom. When my grandfather was a young man working six and one-half days a week in Chicago, he looked forward with longing to a world in which life would be a little easier. I began to see people realize many of the things that we as undergraduates had clamored for in the last years of the depression. We began to see not merely the political promise of a chicken in every pot, not just one car in every garage, but two cars in every garage — and sometimes the catastrophic problem of storing a snowmobile or boat in the garage along with the two automobiles. We reached a point early in the 1950s where every man, woman and child in the United States could ride simultaneously (if not for the traffic jams), because of the number of autos we had. In 1973-74, we had 100 automobiles for every 4 the Russians had. We believed this kind of material gain would end much of the anguish of the human spirit — and we were dead wrong. By the 1960s many young persons were demanding things for which we had longed.

In one of his most recent writings, Bell talks about the revolution in entitlements, where persons expect that the world owes them a living. This kind of thing has an ominous note to it for an obvious reason. Many young persons today are not motivated because, with the likelihood of employment insurance, guaranteed wages and other prospects, they do not face the chill of hunger. Many bright young people, however, also realize that there is not enough affluence to go around. Thus, there is neither the "carrot" nor the "club," and I can only hope for a careful, evolutionary revaluation of what we believe in and what we are taught.

In addition to the concept of our moving into a postaffluent era, we will very possibly find ourselves severely reappraising the "growth-is-good" process that motivated us for as long as we have had industrial revolutions. We might look at Kurt Schumacher's idea that "small is beautiful."

In the matter of reexamining "growth-is-good," I had a rather fascinating dialogue with a former classmate of mine, Walter Heller, the Regents Professor of Economics at the University of Minnesota, who is a distinguished economist and was a major adviser, if not senior adviser, to both Johnson and Kennedy. As we looked at the possible shape of the next twenty to fifty years, we came up with a model showing that we would move into a cylindrical phase where the balance between outgo and input was more in line, i.e. a somewhat stable state. Approximately between 1995 and 2000, we need to envision something like an inverted funnel at the top of that cylinder, which would be a dynamic contraction of what we are using, and with a narrower kind of cylinder going upward. This dynamic contraction relates to our need to learn in the next twenty years how to do more with less. Telstar, for example, which does a much better job of sending telephone calls across the Atlantic than cables, has one-tenth ton of copper inside it; the total number of cables needed to carry the same amount of traffic conventionally on the ocean floor would weigh 75,000 tons. In this period of dynamic infraction, we need not totally do without, but must learn how to make one-tenth ton do some of the work that 75,000 tons were required to do earlier.

Rather than thinking only about how to miniaturize, how to work more efficiently, we must also consider what is happening to our imports. An industrial nation like the United States needs to import thirteen basic ingredients, including iron, steel, coal, chromium, tin (from Rhodesia), oil (from the Middle East), etc. In 1974-75 we imported approximately 50 percent of materials listed above; by 1985, unless we find new domestic reserves, we will be importing eleven of the thirteen at approximately a 50 percent level. This suggests that we need not only to practice parsimony, but to rethink our actions many times.

The next point that seemed to characterize the dialogues we had with our fifty consultants was a frightening one. Most felt that we faced the prospect of what I will call "regulated freedom"; the opportunity to do what one chooses — something we have always prized in America — was being reconsidered.

One man, for example, pointed out that the promises of social welfare for more and more people were going to necessitate restrictions. If, according to Wilbur Cohen, one of the midwives of the Social Security years, we are to have guaranteed minimum wages, guaranteed employment, etc., a lot of regulations and directions will undoubtedly be required by 1995. One of our problems is to learn how to live with this without losing the freedoms which we have always prized in this country.

Regulated freedom may very well become a threat as well as a need in the next twenty to twenty-five years. It already has happened in a number of countries. Margaret Mead said that we will probably have what is called a "string-saving society," or one that will involve a great deal of recycling. We must, if we want to leave something for our posterity, think of ourselves as users rather than consumers.

A couple of grim thoughts arise here, however. We have heard about the population and about how we are being squeezed by numbers. I was appalled by some of the information I received about the gravity of this problem. I learned, for example, that after subtracting deaths from births, we are adding 200,000 mouths per day to the world population, which means a city the size of Houston every 10 days, and a state the size of South Dakota or Montana every 4 days. This is a dangerous problem because of its exponential quality. It was estimated that there were about 12 million human beings alive in the year 10,000 B.C., about the population of greater London. In the 1860s there were 1 billion human beings. In late 1975 or early 1976, we passed our fourth billion. Demographic projections suggest that in view of the number of women of child-bearing age and the rate at which the population is increasing, and assuming there are no changes in the next decade, there will be 1 billion persons born between 1985 and 1994, making the population almost 7 billion by 2001.

This is a catastrophe for a variety of reasons, but I will touch on only one or two of them. Much of this growth is appearing in places that can least afford and least support it. Four of the five nations that produced almost one-half of this enormous 200,000 additional mouths per day are Bangladesh, India, Pakistan, and Indonesia — and this is despite efforts on the part of Indira Gandhi and others to try to cut back the population. Incidentally, the country with the greatest rate of reproduction at the present time is Mexico; 50 percent of the population of Mexico is fifteen years old or younger. It has been estimated also that the number of Caribbean youth in Mexico (Caribbean and Isthmanian states) will probably jump from around 17 to 35 million in the next twenty years. If we think we have many Latinos moving into the United States and no way of restricting the flow now, in the 1990s there will virtually be a constant movement unless we drastically change our immigration policies — and that is not going to be easy in a world where we need mutual reciprocity and mutual support. Demographic studies have also shown that in 1975, 1 million human beings starved to death and 10 million suffered brain damage or permanent physical damage because they did not have enough to eat in their first year of life, or because their mothers were undernourished during their pregnancies. This is a catastrophic problem in light of the impact that persons who are defective may have upon the world's population problems. Of course, related to this are the problems of hunger and population, the wear and tear on our globe, and the serious problem of pollution.

Another item to be considered is the matter of emergent changes regarding our relationships with the third world. There are many persons in the third world (sometimes also called the fourth or even fifth world). These nations are aware of the overconsumption of nations such as ours, and the problems to which it leads. Merely redividing what we have on a completely equitable basis does not provide a solution to that problem, either. Thus, we must look very carefully at how we are going to handle this overconsumption. Heilbroner remarked some years ago that if the typical American or Canadian family were changed by some magical movement into a family typical of 50 percent of the world's population, these persons would be stripped of all their clothes, except one suit or one piece of clothing for every person and a pair of shoes for the father of the family. Journals and papers of all kinds would disappear, all bank accounts would be destroyed, the house that people lived in forgotten (the family will have moved into the tool shed behind the house), and the nearest hospital facilities transformed into a clinic ten miles away with only one trained midwife. You would also give the family an annual income of $300, of which the father would pay $100 to the landlord and another $100 to the usurious gentleman who loaned him the money for seed, and keep $100 to support his family for 365 days. This is a very difficult type of situation, and the third world is going to apply more and more pressure, just as the oil-producing nations are doing.

There is a fishhook in this, however. In a paper that, to my knowledge, has never been published, the president of the British Historical Association pointed out that nations such as Iraq that are seeking to industrialize are planning to increase their share of the world's gross national product (one might call it the gross world product) from 7 percent to 25 percent by the turn of the century. We might cheer that these nations will be able to live better and we will thus have less to carry, but there is a danger in this. In order to maintain our unemployment at its present level, we must increase our own productivity by 4 percent every year or, according to the Brookings Institution, by 7 percent. Britain is in bad shape. Japan — Herman Kahn said a few years ago that the next century might be Japan's century — is in dire straits. These countries are now faced with an enormous amount of competition from Iran and Taiwan, and this fact could totally change the patterns that the western world has known (industrially speaking) for the last 150 years. This is something that we will hear more about. These items ought to be matters of public discussion, information and debate, but they are part of the iceberg that never even surfaced in any of the political discussions that I heard during the heated campaigns (possibly because there were only frustrating answers, temporarily, that could be given).

Another item is the matter of some of the fiscal difficulties into which we are drifting. One of our consultants, Wilbur Cohen, well known for his work on Social Security legislation, told me flatly that, as matters now stand, our Social Security system faces bankruptcy by 1980. It was never intended to be actuarially sound, and vast additional sums have to be pulled from somewhere. Originally there were seven workers for every pension; in 1973 there were 3.4 workers for every pension; and by 1985 there will be 2 workers for every pension.

The difficulties with Social Security point up another phenomenon: the aging of America. Twenty years ago the median age of our population was around 17 or 18 years of age, but between now and 1985 or 1990, the median age will range from 25 to 35 years of age; and by the turn of the century, there will be a 50 percent increase in the Gray Panthers, jumping from 20 to 30 million people. All of these people are going to have an enormous impact on our lives, and the political impact will certainly be tremendous. Nevertheless, these things are not yet seeping into our minds.

To compound the population problem, we are under considerable financial stress. In the past ten years the cost of social benefits has risen 738 percent from $13.3 billion in 1964 to $111.5 billion in the fiscal year ending last June. In addition, $108 billion was plowed into American public education; $116 billion into various kinds of subsidies, such as Medicare; and the cost of pensions for retired military personnel has been projected as $8 billion for fiscal 1979. Ironically, in 1937 during Roosevelt's administration, the total cost of federal government payments for past, present and future wars was only $1 million more than the cost of pensions for the ex-servicemen and ex-servicewomen in the late 1970s and 1980s. Consequently, I foresee some economic discomfort that I think is going to be pretty difficult for us.

In short, the world is one in which I think we can live with some belt-tightening, but one in which we need to live with a certain kind of insight and understanding. There is little evidence yet, however, that we are in a position to encourage our legislators to support any type of future planning; yet I know from reading the legislation that our legislators, at least a number of them, are completely aware of these forecasts.

Despite the troubled kind of world that has been projected by the persons I have consulted, there is a surprisingly gratifying, strong feeling that we will make it. I will try to identify why, in view of all the gloom and doom, people like Norman Cousins and Lear are optimistic. Although all of these reasons are very speculative, of course, one reason is that human beings have had a marvelous track record; they have had a high survival quotient all these years, and there is no reason to suspect that they should suddenly try to commit species suicide. Second, is the interesting point that David Rockefeller made, i.e. a trend is not necessarily a picture of reality, it is a picture of what will happen if we do not mend our ways. If you will recall, Scrooge in Dickens's *Christmas Carol* says to the Ghost of Christmas-yet-to-come, "Spirit, are these shadows of what must be or of what may be?" The spirit does not answer, but Scrooge assumes that he can change, and he does — and Tiny Tim does not die.

In the same way, the various future reports have value because they have alerted us to what can happen if pollution goes unchecked for another fifty years; or to what will happen to food if population growth is unchecked. This does not mean, however, that we are going to die on our backs. The reports, as Rockefeller, Margaret Mead and others have repeatedly said, merely suggest what we are challenged to do. Humans are adaptable and would be stupid indeed to continue polluting to the point where we would all be dead when we realize there are ways to restrain it.

Another item that would seem to suggest optimism is the fact that we do have time to avert disaster before it closes in on us. About twenty years remain before we face the risk of doing irreversible damage, in terms of population, resource depletion, and in terms of living on a planet that would be insupportable for most of its conceivably 8 or 9 billion inhabitants. This time offers us years to make the social decisions more carefully, e.g., to deal with the kind of legislation that Hubert Humphrey proposed about nine months ago.

Another item, which I prefer not to consider as completely idiotic idealism, is that human beings are improvable and that this trend, if it continues, will help us. In the year 1900, it was a pretty lousy world — even in America. Children slept under newspapers on the barges of New York; women were little better than chattels for some years after that; people like my father-in-law quit school out of necessity at the end or middle of fourth grade to work as a breaker boy in the coal mines of Wilkes-Barre. Until about 1914, there were youngsters in Illinois aged eight or nine working fourteen hours a day under the most hazardous of circumstances, without any child labor laws to protect them. Skipping to the present, today you would never find a president saying "I took the canal!" as Teddy Roosevelt did; or a publisher like Hearst fermenting the war with Spain, only to have us discover in 1976 that the explosion that sank the *Maine* came from within and not from a torpedo shot from the dock. We would not find, I think, the ideas of the League of Nations being rejected. The diffusing of many of our problems at the present time, I think, has a most important and optimistic impact on this.

Another reason for optimism is the fact that we still have a lot of clout. One of the magazines I try to read rather lamely to see what others think of us is the French *Paris Match*. The author of a recent article believed that 250 million Europeans have far less clout, in terms of what can be done, than do 205 million Americans. The article went on to point out how well we stood (by comparison) on wheat, cattle, electricity, computers, telephones, etc. We can and will find the answers, and I think the lifestyles will not be any worse than what I enjoyed in the 1920s.

I once asked Norman Cousins, "Are you an optimist or not?" His answer that he is naturally led to the question, "All right, so why are you an optimist?" He made an interesting observation which I think is important: "We do not know enough yet to be pessimists." If we do not know that we are damned, there is a chance that we can bootstrap ourselves up very well, and I would like to believe that we will — of course, we must.

Twenty years ago Maurice Chevalier, that very charismatic French singer, was performing in a perfectly marvelous one-man show at the Shoreham in Washington, D.C. He was so good I saw it two nights in a row, wondering, since he was so good the first night what he would do the second night. Of course, I should have guessed he was like a videotape: precisely the same routine, word for word. He told a story that I have never forgotten. Asked by a reporter how it felt to be seventy-eight years old, Chevalier cocked his straw hat over his eye and said, "I tell zem it is magnifique — considering ze alternative." I would like to suggest that we really do not have any alternative other than optimism in this situation. We do not know enough to be pessimists. We have identified our problems and it is important to know the answers.

I would like to turn to the future of education, and its responsibilities and relevance for library science. The remarks of three people interviewed are of note here. Willis Harmon, an engineer and member of the Stanford Educational Policies Research Center of Stanford Institute, answered the question "What do you think of education and its responsibilities?" in this way: "Education is going to be increasingly important during these next forty years; but I am not sure about schooling." He went on to suggest that education would take place through media, library science — indeed, the whole realm — to educate a much larger clientele than we have ever educated before.

The next man, Lester Russell Brown, an internationally known agronomist and author of *World Without Borders* and *In the Human Interest*, took me to lunch at the Cosmos Club in Washington, whose walls are lined with pictures of Pultizer and Nobel prize-winners who are among its members. Pointing to this distinguished assemblage, he said, "There probably isn't a man or woman in this group who couldn't talk for an hour to a semester on resource depletion, hunger . . . ," and he went on down the list. Not one of them learned it in schools; they learned from self-education, from libraries, from television programs, from reading, from magazines. You must recognize that agencies other than schools will have to carry in the next twenty years the melancholy burden, as I believe he phrased it, of seeing that more people — the uneducated, the prejudiced, the biased, etc. — get the word about some of the things we need for a decent twenty-first century.

Larry Cremin, president of Teacher's College, made a similar point. He said that by 1995, the public may decide to put much of its money into nonschooling activities, public service television, and expanded self-education services such as libraries. He went on to say that he was concerned about the way in which the world was changing under the impact of the media, particularly in the United States. As a young man, all the news that was fit to print was on the first page of *The New York Times;* the editorial page had the biases, the opinions, the subjective viewpoints. He was increasingly concerned that, in a world so dominated by a medium, 80 percent of the population now gets most of its news from television, and that this is selected news which could be biased. There is a potential of having control of the system held by either unethical persons or those inclined to be manipulators.

My grandmother left me with two pieces of advice that I will give to you. First, remember why there is free cheese in the mousetrap; be careful at what you snap at. I apologize for having ignored her second piece of advice. She never heard a poor short talk.

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Response

Since I did not have Shane's speech before making this presentation, I decided to examine articles he had written in the past and hoped that, with any luck, he might talk about the same thing. Being a very unlucky person, I now know he did not. Thus, my comments relate to Shane's past writings.

Shane has stated that knowledge for real educational change already exists; some of tomorrow's answers can be found in the past. For instance, new theories, innovative discoveries and changes in education in the 1960s had already been discussed by educators such as John Dewey and others in the 1930s. I wondered if the same things could also be happening in libraries. Are librarians in the 1970s redoing and rediscovering the 1930s? There is some support for this idea. For example, are not the independent learner programs and information and referral services — innovations of the 1960s and 1970s — essentially a refinement or reformulation of traditional library services? Aren't we returning to the readers' adviser concept of the 1930s? Wasn't outreach, the big news of the 1960s, also the big news of the 1930s?

We have learned that learning is based on experience; we learned about poverty from experience. In education we learned that what children absorb in the classroom is mediated by their social and cultural backgrounds, yet we expect all children to meet the same standards of performance in order to move from grade to grade. We know that children are ready for school at different ages and different times, yet we require that they all enter at more or less the same age. In libraries we know that a children's librarian, in order to do a good job, needs a broad background in learning and developmental theories; yet library schools have been remiss in incorporating theories of people such as Piaget and other developmentalists into children's services courses. One of Shane's ideas that should have a tremendous impact on children and adult public library services is his idea that the divisions between elementary, junior high and senior high schools be dropped and that we should explore the concepts of a lifelong, seamless, open-access learning continuum along which people will progress from early childhood to adult education.

Let us look at children's services. Children's departments were set up to provide books and materials for children to satisfy their informational needs, to give guidance and to cultivate the enjoyment of reading. I wonder whether, in light of the future envisioned by Shane and in light of education itself today, the present structure is satisfying these needs. Has the separate children's room as we know it become a facilitator or a barrier to the goals we have stated?

Many children today are ready and able to use more sophisticated material than is contained in children's rooms. Increasingly, they need to use adult material. Yet in many libraries, children still need special permission to use the adult facilities — and even if special permission is not required, sometimes just by physically placing a collection of books elsewhere and labeling it "adult," children's access is restricted. On the other hand, many adults in society are not well educated; they do not read well (educational statistics indicate that this trend will continue). Adults sometimes need the less complex material which can be found in children's rooms, but they are too embarrassed to enter a place labeled "Children's Room." I am certain that everyone here knows at least one story about an adult coming into a children's room requesting something for a son or daughter, when in reality the adult wants the material for personal use.

Would I, as a children's librarian, be better able to satisfy the informational needs of the child if I worked with the library's complete collection? Would the adult patron be better served with a nonstigmatized access to children's material? I am not proposing that we eliminate children's services, but I do get questions about the validity of the present pattern. I am not suggesting and do not expect a children's department to be four walls with people working with a certain clientele to avoid a particular abode. Separate children's rooms were often established to protect the child and serve his very special needs. With the current furor over children's rights, do we have the right to set them apart and give them special treatment when that special treatment makes it easier to abridge their freedom?

In a recent Supreme Court decision, the Court ruled that students in school, as well as out of school, are persons under the Constitution. They possess fundamental rights which the state must respect. Do we respect these rights when we separate these people or make them special? Children's librarians and the administrators for whom they work have been loathe to address the question, an assumption on which we base our activities. If we are to remain effective, we must examine the underlying assumption for our services, especially if we take into consideration that more and more educators envision a society in which education is an ongoing, self-motivated activity. Even today teachers are placing more and more responsibility on the child for his own learning.

In many ways our refusal to look ahead has already started to hurt us. The position of children's coordinator has been dissolved in many libraries, yet nothing appears to have been lost. I believe that this is our own fault. I have worked in two systems where this has happened. In both cases, the coordinators were so busy maintaining the status quo and longing for the "good old days" that they failed to make the necessary shift in orientation and jurisdiction necessary to make their jobs useful and viable. In one system, the coordinator spent most of her time selecting the book to be used for storytelling and making lists of the approved books to purchase. Perhaps this may have been valid (although I have doubts) when she first began to work, which was a time when most children's librarians were not degreed. In 1973, however, when all of this woman's children's librarian staff had master's degrees, this was an outrageous, unnecessary and wasteful activity for a person at her level. Her job was eliminated — and I do not think the library is hurting without her!

What is keeping us from change in the children's area? I believe it is largely a lack of support from the library administrators and their limited view of library service to children. Children's departments have traditionally received only a very small percentage of the total library budget, despite the fact that most children's departments perform a large portion of the library service. Children's departments have never been as well staffed as other departments. Change, however, takes time and money. Time is money, and in order to manage the change, children's service coordinators need time to think, time to reflect: Why am I doing what I'm doing? They need time to examine the conceptual basis of the job. I think this is one of the more important things to consider in order for people to effect change. Time is needed to do what is necessary to keep ourselves headed toward our goal. By their actions, their budget allocations and their staff allocations, too many administrators deny children's librarians this time. They appear to be saying to their children's librarians: "You are not important and what you do is not important." This is not the best way to motivate people.

The lack of research is another factor that has kept us from making real change. Educators have a rich storehouse of research on which to draw; the library field does not. A great deal of research in many areas of library service is needed before we can effect change.

Fear has also kept us from making changes. Recently, when it was announced that a children's library in Chicago was to be moved to a school library, the librarians reacted emotionally rather than intelligently. They feared that they would suddenly lose their jobs. They could not get beyond this fear in order to see how they might fit into a new pattern of service.

Let me say in closing that I am still optimistic about our future. I feel that the librarians coming out of library school today tend to be dedicated, hard-working people who are already looking toward the future.

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Changes in Sexual Identities

American society is in the early stages of a very dramatic revolution in the world of work and in its relation to the rest of human life. The foundation for this revolution lies in the development of a relatively stabilized, urbanized, industrialized — or postindustrial as it is now called — middle-class population and culture.[1] Its seeds were the movement of the 1960s, which questioned traditional views of the family, or work, and of our whole value system with its strong emphasis on the economic institution. The youth movement may not have directly revolutionized the "establishment," but it did raise some questions. The now-adult participants, as well as the youth of the 1970s, are not as heavily committed to hard work and making money nor to upward mobility as were the immigrants and the following two (or more) generations, which adhered to the Protestant work ethic with its puritanical rigidity and saw obvious rewards in pulling themselves out of the ghetto and into the "good life."

The seeds of the new revolution are also found in the pre-Friedan movement of women out of the isolated home, once the children started or finished grade or high school, and into their own competence-building schooling and/or paid employment. Betty Friedan's *The Feminine Mystique,* preceded by Simone de Beauvoir's *The Second Sex* and the less well known Richard LaPiere's *The Freudian Ethic,* opened fully the questioning of the logic and consequences of the way our society had developed.[2] The effect of the feminist movement is felt far beyond its membership. Recent change-inducing submovements of a variety of forms, including both men's and women's consciousness-raising groups, encounter groups, assertiveness training programs, "flexible careers" employment agencies, etc., supported by a mushrooming of literature in the form of books, periodicals, and pamphlets, are the small plants growing out of these seeds. Also growing is the refusal of many men to be geographically transferred at stages of life which they deem bad for the family — or to be transferred at any stage. The growing divorce rate can also be seen as a revolutionary symptom, as people get out of traditional marriages which stifled them personally, being yet sufficiently unsophisticated and bewildered by all the freedom from constraints to be able to change that marriage creatively instead of trying with a new mate to establish a more fulfilling relationship.[3] The plants of the new social changes are still young, and they must offset centuries of prior change which thrust Europe and America out of the preindustrial societal systems and into their present condition. In order to understand what is happening now, we must examine the previous systems and the past changes.

Pre-Industrial Europe

Ariès points out in his *Centuries of Childhood* that life prior to the eighteenth century, at least in western Europe, was very public.[4] There were no distinct lines separating the family from the rest of the home or the community. In the village, social interaction, work, leisure, and political arrangements were made in the road, as people went from one small plot to another, to church, or just out of the homes. Everyone interacted with a variety of others regardless of age or sex, and the work groups consisted of mixed members with a division of labor by age and by sex — although cooperative units were formed when needed. The Nobel prize-winning *The Peasants* by Reymont[5] also describes such a public life in a Polish village, with nonfamily members residing in many homes. This was true, to an even greater extent, in the manor homes. These homes traditionally housed children of other families who served as servants, tutors, scribes, etc., and the large "common room" served many functions at all times of the day and night. Folding tables were brought out at meal time, folding beds at night. Many people were born and died in such rooms.

Shorter[6] finds life in the towns of England or France also very public. Laslett and Wall[7] enumerate all the people living in a baker's home/shop combination in their book, and many of the new historians cite the work and interaction in shops and streets of both men and women.

Women were members of guilds, according to Oakley,[8] and widows inherited the businesses of their husbands with whom they had worked and managed them with the help of different kinds of workers. Mothers did not rear their children, or at least did not do so alone. Among the upper classes in France, for example, mothers sent infants to wet nurses in villages, and few people invested much attention or affection in young children because of the high death rate.[9] Children as young as seven years of age were sent to other homes to be servants, and returned only at about age fourteen. Multiple child-rearers existed at all levels of the whole society; socialization methods differed among classes. Marriage was embedded in a network of relations, and was not considered to be a primary or affectionate bond.[10]

Early paid labor came in the form of cottage industries, with capitalists farming out raw material to village homes where the wife and children — sometimes with the help of the men — processed it into a finished product. When factories introduced steam and large-scale machinery, all members of the family left the home to work in them, often moving in order to live near the factory.[11] By then the family had become private, the household structure had developed specialized rooms (with the servants of the upper classes restricted to their quarters), and visitors were admitted only during special hours.

Wars of centralization developed nation-states in Europe, and the breakdown of the power of manor lords facilitated the creation of a nationalistically motivated mass education system. Ariès claims that childhood as a concept with a set of relations to adults emerged only after the creation of the school system.[12] In any case, boys (and later, girls) were taken from the home and schooled into a literate national culture. The youths learned skills necessary for marketing themselves to employers, and were thus freed of the power of the patriarchal family line. Simultaneously — and the new historians disagree as to the major factor causing this change — restrictive or so-called protective legislation started moving women out of the factory and into the home to take care of the children. These historians do agree, however, that women lost many rights following the removal of production from the home and their exclusion from the productive sphere of life outside of the home. This loss was particularly strong in societies focusing on the Protestant ethic, which judged work for pay to be more valuable than other effort, and economic success to warrant even harmful adjustment by all other institutions.

By making the focal institution of society the economic one, western Europe and especially the United States developed societies of abundance for most of their members, but at cost to many other aspects of their lives. The older generation was justifiably left behind geographically and culturally during social mobility. Siblings moved in different directions in the social system. Friendship was pushed aside or converted into a mere social companionship which was not allowed to interfere with the man's work and career. Religion was modified so it would not interfere with the business world, and life became increasingly segmented with separate value and personality packages. Puritanism ensured that leisure time was spent in "recreation" of energy for the workday and "seriousness of purpose was heightened by strong religious feeling; the average man locked himself in his office and his wife in his home."[13] Even the middle-class home lost its place as a center of societal life; the husband and children returning to it wanted peace, not excitement. Not surprisingly, the role of housewife lost the stature it had had in the previous world.

The nuclear family was freed from control by older generations and siblings from the male family of orientation, but it simultaneously became boxed into a highly interdependent small unit, lacking automatic external support systems. If a man has to go out of the home to make the money by which the home and the family are sustained, and servants no longer exist as an available set of supports (because better pay is available working in other occupations), then someone must stay home to care for the small children. That someone became the wife-mother, isolated from societal life in all but the upper classes by her 24-hour vigil and held responsible for all consequences of her socialization of the children. The burden of total emotional and social support all day long between the mother and the children is reportedly dysfunctional to the mental health of both, as psychologists and sociologists have been saying for years.[14]

The stage of intensive child-rearing is, however, short; by midlife, the American woman faces thirty years of healthy and energetic life with no major function, especially during the approximately fifteen years when she is separated from her husband due to his death, or possibly before that as a result of divorce. In the meantime, the husband has had to make a life-constraining decision about which occupation he will pursue, and he must continue working there, with one or two shifts in his career, until he dies or retires. As Fromm pointed out,[15] the marketing mentality of American society even deprives him of some of the pleasure of retirement, because his worth as a man is measured by what he is worth to employers, and retirement implies that he is no longer worth anything.

By the late 1950s American society had settled down, having absorbed millions of immigrants who accepted the basic value system. Nevertheless, there were tremendous intergenerational struggles as people were socialized into a different type of world than the village, or as the ethnic community fought with their children who wanted to "make it" the American way. An elaborate ideology and value system justified our entire way of life as "natural" with the help of neo-Freudians such as Helene Deutsch.[16] Women were supposed to stay at home contentedly and not be involved seriously in the life outside it. Voluntary associations and volunteer work were permissible, but only if such activities did not interfere with the flow of life at home. Men were taught to put all their efforts into their jobs, accepting any demands made upon them as an inevitable consequence of a system which paid them for sacrifices, so that they could own homes, cars, and have well-fed and well-clothed families. In order to function this way, they were taught always to protect themselves from others and to be "strong," i.e. never to show physical or emotional weakness.

Social Roles of Americans, Now and in the Future

I began to study American urban women between 1956 and 1966 because I was aware of the tremendous gap between what I observed as a foreigner and sociologist and what I was reading about the family in this country. I came directly from Poland to Champaign-Urbana for high school, received my M.A. at the University of Illinois, and went on to the University of Chicago for a Ph.D. When we finally settled in a suburb of Chicago, I was startled to meet women who were entirely different from those I had been reading about in American books and periodicals. These were the years of *Generation of Vipers,*[17] *The Lonely Crowd,*[18] *The Organization Man*[19] and *Modern Woman: The Lost Sex.*[20] Although the behavior of young Chicago-area women displayed competence and creativity, their self-definitions were not positive. "I'm just a housewife," was the most frequently given answer to occupational questions. At the same time, these women did not feel right about wanting to go back to work, because they accepted the idea that wives and mothers should stay at home. The double-bind effect, of living in a society which trained them to be competent and then both put them in a role defined as not requiring competence and forbade other roles, took an enormous toll on these women. Society simply did not understand the social forces which made life for them so difficult at three stages: (1) when they suddenly left social roles outside of the home and found themselves in the home alone with a small infant, (2) when they were left with an "empty nest" for varying amounts of time when only halfway through life and without new direction, and (3) when they became widowed.

Despite a complete lack of societal support and understanding, American women began in the 1960s to create their own solutions to these problems. Coffee-klatches provided opportunities for the sharing of solutions, in much the same way that brainstorming sessions do for people in other occupations or work groups. Sharing child-care and housewife activities became commonplace. Spock's book[21] and books by other experts provided greater feelings of competence in the role of mother than were provided by many pediatricians. New subcultures were developing in the suburbs and inner city which lessened the heavy pressure of traditional norms. Gradually, wives and mothers were slipping out of the back door of the house, going to school and even to work. That movement has grown considerably since the 1960s, aided by the feminist movement and particularly by the door-opening book, *The Feminine Mystique,*[22] which caught women's imaginations more than any other book that analyzes the ideology rigidifying their lives. Although few women are members of the divergent branches of the feminist movement, its influence on them — and on men — has undoubtedly loosened the mold of the past and will provide the impetus for future revolutionary changes.

In the meantime, some of the hidden hostility between men and women in American society, so apparent to visitors and new members, surfaced. The middle-class, middle-aged man, working hard to earn more money while fearing that his death was around the corner, deeply resented the initial stages and the more vocal branches of the feminist movement which labeled him the "oppressor." The movement has mainly shifted focus to the system within which both men and women are functioning, trying to change its inflexible demands and discriminatory policies. For the most part, men have not joined forces with the women because they are still fearful of their own careers and reputations to a degree which makes them unwilling to challenge the system (despite the benefits they — as well as their wives — could accrue from changes). It will take an immeasurable amount of time before the fears instilled in boys will weaken sufficiently to permit them to go through the painful reexamination of values and goals when they reach adulthood (or at any time, for that matter) which women are now undertaking. It may take another generation of boys growing up with less sexist socialization by self-examining mothers before women and men become willing to join forces to push for a greater balance and flexibility in the life course, and for a change in the values that serve as guides for involvement in social roles. So far, men's sensitivity groups are appearing mainly on campuses, while the business world has focused, not surprisingly, more on encounter groups and assertiveness training.

Thus, the feminist movement — and Betty Friedan[23] is one of the spokeswomen and leaders of this movement — has caused a realization by women that the system must be changed through cooperative effort in order to free life into a variety of time segments, worked out through teamships. People who are reexamining both the relationship between work and other social roles and the rhythm of occupational engagement are finding a variety of solutions to the current problems of men and women. There is no economically insolvable reason for work and other roles to be organized in the way which they currently are in America. Two people can hold a single job more efficiently than can one in a majority of occupations, whether the team be composed of a husband and wife or two persons with similar training who do not want to work full-time for other reasons but cannot afford part-time pay. Abbott Laboratories has a chemist position which is currently being filled very satisfactorily by two people. Gustafus Adolphus College has split an academic job in a similar manner, and librarianship positions would appear to be naturally suited to this practice.

Flexibility can be introduced differently at many stages of the life course. For example, if a couple decides to share a life together, they can plan the most efficient set of role complexes possible. If both cannot continue school, the man can probably drop out with a higher income from a job than can the woman, who can then continue to be trained for a better-paying and more satisfying occupation than those held by most women. The child-bearing and -rearing stage does not have to be entered by a couple in their teens or young twenties, when it is more logical for the couple to invest in further training, a start at a career and saving money for their years as parents. Careers do not have to have a steady line; in fact, much of the recent research shows that most people do not have steady careers anyway, for a variety of unplanned reasons.[24] When a child is born, the couple can alternate parenting, either by both taking 2-person jobs, or by handling a traditional 2-person single job, held by the mother or the father. There is a variety of ways in which being parents and working can be combined in the early years of a child's life. In addition, these years when a child is young comprise a very short segment of a person's life, and other, social roles can be pushed into the background because of the importance of the parental role for both the mother and the father. The isolated household is also dysfunctional, if not harmful, at that time, so joint households or across-threshhold cooperative ventures can be initiated without tying people down to such arrangements for decades.

The next stage of the life course can involve both partners and children in a variety of social role complexes, depending not on tradition or happenstance, but on planning with long-range goals and values in mind. Some couples may opt for a heavy concentration of effort on the career of one member; others may find ways of comfortably containing dual career arrangements with high levels of concentration and commitment. A third type of dyad may distribute efforts more evenly among several roles at varying stages of the life course, including enjoying friendships, leisure-time pursuits, contributing to voluntary organizations upon which communities are dependent, parenting, etc.

Higher education has become much more flexible and responsive to a variety of people in the past few years; there are all kinds of students in libraries. The area of societal activity which is only now beginning to open up occasional and exceptional flexibilities is the economic one, and it is here that basic values and activity patterns must shift in the future as people become less willing to sacrifice other aspects of their selves and social roles for the job and the money it pays. The current organization of work into time slots and occupational packages, with the constant emphasis on the career line (varied as it is within different occupations), has made life rigid to the extent that people are increasingly dissatisfied. We are now experiencing not only a "revolt of the client" but a revolt of the professional and other occupation-holders as well.[28] There is consistent evidence that increasingly competent human beings are, and will be, making demands on the system to change and become more flexible. Organized protests are being supplemented by the less visible ones, such as the patient referral system and the changing patient-doctor relations created in one-to-one interaction.[29]

There have been dramatic changes in the lives of Europeans and Americans in the past few centuries. Some of these are judged by most observers as generally beneficial in that they have increased health and longevity, opened up a variety of resources to a variety of people, and created economically abundant societies. Some of the social roles and relations of these people have suffered, however, from the strong emphasis on the economic institution and the insistence that other institutions adjust to its demands, as well as from the rigidification of work engagement and schedules. The relatively isolated nuclear family, the high-pressured male breadwinner, and the underutilized abilities of women for a major part of their lives are costs (particularly in America) which many people are no longer willing to pay. Various indicators of change are apparent on the American scene and they are apt to grow rapidly in the near future, pushing on the world of work to become more flexible and more evenly balanced in its control over the other social roles of its participants, including all those people who are now discouraged from participating. Changes in interpersonal relations are in greater evidence in America than are changes in the way people are engaged in the large bureaucratic organizations, particularly in those relations where most men, half of the women, and those close to them are now economically dependent.

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Response

It was refreshing to hear Lopata discuss something that I have been talking about for a long time, while not always finding the justification I needed for saying some of the things I do about librarianship. Sometimes I have a tendency to annoy people by trying to reduce librarianship to humanism, but I feel very strongly that this is where its base must rest if it is going to be a part of the society we are talking about.

Shera and several other library historians have told us that libraries were born in an age when the household was formed for a specific economic purpose. At that time, people's roles in life were generally predetermined and it was very difficult to achieve an upward mobility. It was hard to come by the means for role change. The education system in this society took a long time to get going, and libraries only slowly developed a reputation for being the university of the poor, as well as being the continuing university for the well-to-do. Now, people's roles in society have changed, as Lopata has indicated; society's needs also have changed to the point that libraries are saying: "I guess we are going to be extinct any moment now!" "We're about to drop through the cracks in civilization!" "Close the door and let's all go home!"

Such remarks are all hogwash. It is not true! Society needs information now more than it has ever needed it before, and it needs it in the form of stored knowledge. Knowledge comes in multiple forms, as we know. To say that the library is solely an institution of education, or solely an institution of recreation, is to misapply what society is asking of libraries. Society is asking us to recognize, as Lopata has said, that people want to be their own competent contenders with life. There was a time when a doctor would treat his patient by applying spider webs and poultices; similarly, in *Gone with the Wind,* "run and get the hot water and lots of sheets" set the scene for "birthin' babies." Everyone expected to contend with the problem.

It is very difficult for most human beings to communicate today with a doctor. It is extremely difficult for human beings to communicate with lawyers. It is extremely difficult for human beings to communicate with each other, because we are a multilevel society based on a multiplicity of values. We are told, for example, that national values are changing, yet in order to change our old values, we need to measure ourselves against the values we know and the values being proposed. We do not like to do this in public, for we have been conditioned to believe that life is no longer public, it is private. We hide in our houses and apartments, and in our automobiles with the windows rolled up so that we can talk to ourselves, but not to others. We listen to radios talk to us; we allow television to show us things and talk to us. We don't talk back. We need two-way communication and one of the few places to find it is in the library, because the library allows us to carry on a dialogue with a book, and indulge our insecurities without embarrassment and in privacy.

As Lopata pointed out, career patterns are not consistent. Life itself is not consistent. We never know from one day to the next what problems we will have to face. We do not know what changes are going to take place, and if we do not have the ability to access the information we need to deal with change, we go down for the count. All of us know people who have been unable to cope. We have known of entire societies that have been unable to cope. Therefore, we must build change into institutions at the same time that we are encouraging change in human beings.

A fair amount of research in the area of speech communication points out quite clearly that we cannot exist without communicating. We start communicating almost from the very first moment of life. We receive messages, send messages, and miss messages. We do this as long as we draw breath . . . and there is even speculation that we do it thereafter. Once we realize that there is this consistency of communication need and demand, it becomes easier to comprehend why human beings become so frustrated, hurt and withdrawn when they cannot fully exercise the joy of communication, i.e. when they cannot find the things they need to know in order to function. So when we say that we need to push institutions to change, we need to accept wholeheartedly the fact that we ourselves change every moment.

The words spoken at the beginning of this institute cannot be retrieved. They have gone into time and are going to stay there, and no amount of wailing or editing of the transcription is going to change the communication that took place here in these last few moments. We are all in a continuum of time; to try to go back and change things in the past is futile, but to accept the fact that we are changing now, and will change tomorrow, is pertinent.

Someone asked earlier this week if the library was an agent of change because of its seemingly natural stance as a knowledge-transfer agent. Libraries are effective change agents when they meet a need; neutrality doesn't work. There are some notable examples in literature. I still think that one of the most moving sections of *The Autobiography of Malcolm X* is the discussion of what the library did for the man. I think some of the most moving experiences I have had are those of people honoring me by coming to the library to ask me to help them develop some knowledge they need. Some of the knowledge people sought was of the kind librarians downgrade, simply because they did not realize they were being communicated with as a prohuman. One woman who had lost her two children in a concentration camp wanted to read every book in a series that appeared after the war recounting concentration camp life. Several of the staff tried to thwart her in this, saying that she was hurting herself and she was indulging herself. She was not. She was exorcising her fears and her sense of guilt because she was not able to save her children. She had every right to this knowledge transfer. She got it, and eventually found the peace for which she had searched.

This is the kind of knowledge transfer I am talking about. It happens at the academic level, too. I see it with my students who act as transfer agents in their social science courses when they are assigned research. They are sent off to discover what knowledge might exist that the professor is looking for on which to base research, and where it might be found. The first few ventures of this exchange between the student and the client is one of fear and distrust on both sides. The exercise ends up with both the client and the student congratulating each other on a successful information transfer, and hoping they may do it again soon, because they both learned, profited, and found a kind of peace and comfort.

Libraries are changing, and they help people change. They are agencies of social justice, and they should be. It is very difficult for librarians to accept this. It is too easy just to sit back and not to worry about justice, or about what materials blindly handed out at a library can do to individuals, or about the value of the individuals themselves. Such librarians do not try to help people; they just dispense whatever pills happen to be on the shelf. We all want justice, and are demanding a nation with a new, hard set of ethics. I think the ethics of librarianship is something to be very proud of — when practiced, not preached.

Shera used the words, "the clients of libraries are the elite." In our eyes, the elite of librarians are those who understand us, who understand the cataloging system (God help them), who understand why we are there in spite of ourselves. I have seen some very adroit elite outfox many a librarian who was spread-eagled over his or her collection. I have also seen many people, who had no intention of being the library elite, find the knowledge, peace and joy they were looking for in the library in spite of the librarian and the system.

When the library is functioning as a change agent, as a social justice agency, the client discovers that the library is merely there to facilitate the individual's confidence in whatever is needed. There are no strings attached — no exams, no tests, no certificates to carry under your arm. It is what goes on in your mind that counts. Thus, the library elite are the people who accept the library with joy and constant use for the rest of their lives.

When we say we are trying to reach out, that is what we are trying to reach out for: to pass on to people the ability to understand for themselves who they are. One of the best places they can find it is in searching for themselves in the materials that are available in libraries.

I don't want to be a doctor; I just want to feel that when I need medical help, I'm getting justice. I don't want to be a lawyer; but I want justice, and I can't get it if I don't know how, when or where to look for it. If one can accept some of the premises offered by Lopata and evaluate them in terms of the social changes that we know have taken place, then it will be understood that it is people we are talking about, people who need to be communicated with, and who need only to find the knowledge they want — whether it be to bake a cake, build a house, discover a new idea, or find peace.

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*Response: Creating the Conditions for Change**

Before I respond to a paper you haven't heard or read, I want to categorize some of the concepts of change that have been discussed here, and to try to apply those to the processes of library activity. After that I will say a few words about the processes themselves. First, we can categorize those concepts which are available now. Many of them involve quickening the speed of response; for example, automation activities and the computer-assisted instruction of PLATO are all a part of the quest for efficiency. These might be called examples of "quick change." There is also a group we could call "small change." These are no-growth alternatives, the alternatives of lifestyles. The effects of automation on organization, for example, will result, I believe, in smaller organizations and units, and those effects would be a "small change." We also have "loose change" — the concepts which we know will affect librarianship and us, but we are not sure how. We know they exist, and can see changes occurring in society, yet just how they will affect the library is still unclear — although the fact that they *will* affect is not at all unclear. Concepts such as "women in society," the "end of our present hydrocarbon age," and "changing attitudes toward work" are all examples of "loose change."

All of us have to live within this changing society, and changing institutions, including changing libraries, are condemned to it. When our sociological models, which Ely will discuss, are relatively rational planning processes and systems which can be plotted through the identification, planning, and processing of the change, the resulting decision-making (at least some of it) will seem rational. Ely will present graphs showing relatively neat sociological diagrams of how this works; but I suggest that many of the things that we in libraries are most worried about are not so neat at all. They are, in fact, more likely to be akin to those discussed in recent studies on earthquakes and other natural disasters, phenomena which can have tremendous effects and produce enormous changes. Those changes, however, are not the result of rational or quasi-rational decision-making that takes place in implemented and planned change. It should be noted that, after the fact, change can be diagrammed as if it were planned, whereas at the time of the change, such neatness simply did not exist.

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* As an example of "experimental change" arranged by the chairman of this final session of the institute, the response was presented *before* the concluding, prepared paper.

The effects of change on the family, as we learned from earlier discussion, seemed to develop through a long, slow process of approximately 200 years, during which there was a shift from village economy and life to urban life. Remember, however, that the Black Death in Europe, in a space of two or three years, speeded up that process enormously. One fortuitous accident of the plague, i.e. depletion of the labor force, probably hastened the development of coinage for purposes other than taxation and international trade. When workers began to be employed for pay, labor was no longer dealt with as a responsibility or as a barterable commodity. Thus, we see that some enormous changes occur accidentally, and while they are within a generally rational framework, they do not follow a rational decision-making system. Sometimes the causes are political, e.g., the Enclosure Laws; sometimes they are technological, e.g., the inventions of the spinning jenny and the steam engine; and sometimes they are sociological, e.g., the rise of fascism. These phenomena produce something like a starburst of change, occurring in almost a circle around the center. The parallels to "catastrophe" are obvious.

Sometimes the results are only minicatastrophes; they don't have to be outrageous or world-shaking events. For instance, if the legislature or the city council suddenly cuts the library's budget, the resulting minicatastrophe will produce a series of changes not planned for, since there was no time to do any planning. Nor are planning committees useful at this point. The situation must be dealt with immediately. I was talking to a gentleman today who had lost a significant portion of his audiovisual collection in a fire on a delivery truck. Suddenly, he had to respond to a catastrophic occurrence and the normal pattern of preparing for change was useless. The creation of OCLC, or its sudden failure, are types of sudden changes that simply don't follow patterns. I suggest that this kind of change, about which we are most likely to be worried, will probably best be understood in light of the research now underway on earthquakes and other natural disasters.

In his presentation, Ely will discuss Elizabeth Stone's list of priority items for change drawn from a survey in 1973. At the time of that survey, a representative sample of librarians felt that the greatest need was for continuing education. That list posits a library that is essentially like any other library, but only slightly different. It assumes the same fundamental structure of libraries, which is wrong.

Let us now try to apply beforehand the six seemingly necessary prerequisites for change which Ely will present: (1) dissatisfaction with the present situation; (2) the librarian's knowledge about possible innovations and possession of the skills to implement them; (3) commitment by all persons involved; (4) resources to do the job (I'm including time as a resource; Ely talks about it as a separate item); (5) reward for the effort; and (6) leadership. Apply these prerequisites to "quick change" — change which is available now in such forms and concepts as the PLATO system and "information as power," which are associated with efficiency. I think that we all generally agree that there is dissatisfaction with present instructional services. There is certainly a high level of agreement that the instructional role of the library is not meeting the needs expressed by our clientele, and that this lack is producing dissatisfaction. Sometimes that dissatisfaction is a result of not having enough people. We wouldn't have to use PLATO, for instance, if only we had seventeen more undergraduate assistants to help out with those tours we all worry about. Viewed in this way, it is a question of alternatives, of various possible methods for meeting a need. It is evident from the PLATO demonstration you saw earlier that PLATO interactive instruction is probably far more efficacious than any guided tour, because we simply cannot afford one librarian for every student or teacher. We must face therefore the realization that a one-to-one alternative is not the solution.

On the concept of information as power, there is not as much agreement. Whenever a librarian says, "I can't get the board (the university administration, the city council, or the state legislature) to fund a new information service," it becomes clear that the idea that information is power is not generally accepted outside the library world. Nevertheless, I think that a change is going to occur, and that in some cases, the question of dissatisfaction may be not a perceptual problem but a real one. There may truly be an unmet need whether or not anyone on the board, in the city council, or in the university administration perceives it. When someone demonstrates the need, however, a change may well occur.

Regarding small change, I am not sure that the dissatisfaction question is a real one, or is one that will effect change. Some changes will occur because of the structure. It seems unlikely, for instance, that when decentralized automated circulation, cataloging, acquisitions, and even reference (as in some information retrieval or current awareness services) are provided, one can avoid the restructuring of the libraries involved. Library staffs seem to be growing, yet we know that groups larger than about twelve cannot work together efficiently. For every group of twelve people in the system there should be a unit head — and that may be too high a price to pay. Librarians know that this kind of administrative overhead is enormous. At the same time, we see that people want to go backpacking or live a simpler life, and we see economic and technical forces also pushing for smaller units. Thus, restructuring may be forced on us not only by economics, but by the energy situation and/or by change in the whole lifestyle. This combination of ability and desire (which may be the same as dissatisfaction with the present situation) is also forcing change; that combination may indeed be the first rule of change.

In discussing loose change, I have more difficulty applying the dissatisfaction criterion. I defined loose change as those concepts, activities and predispositions which will have an inevitable, but as yet an indeterminable, effect on the library. Certainly the changing world produces some dissatisfaction with the present situation — so change will happen. Current changing concepts of different work, different lifestyles, shared jobs, different approaches to life's game, should not bother us, however. As we change, so will our communities; complaints and pressures from this changing clientele will also change. If we are like our clientele (which we should be), then the drives and the changes occurring within us should be occurring within them and will more or less correspond.

The second prerequisite for change is the librarian's knowledge about possible innovations and the possession of the skills to implement them. This precondition again assumes a rational change — a change to MBO, a change from typed cards to keysort, a change of rules in the catalog, of vendors in acquisition, in bibliographic abilities, and changes which are relatively minor. Such change is a slow process. If we identify dissatisfaction, we can probably also identify those measures which will cure or alleviate the dissatisfaction without having to be experts in the techniques. It isn't necessary to know how an internal combustion engine works to be a fairly good driver. But there is a needed commitment by all persons involved, although that commitment can be passive to the method of change. We must agree on the solution, but not necessarily on the process.

It is absolutely true that the resources must be provided. The problem that children's librarians have in integrating children into the rest of society — into the same reference service, the same guidance service, the same collections, and the like — is one example. It is not just a question of providing funds with the implication of more funds; it may be a question of reallocation both of funds and, certainly, of time. Even when you don't have a choice, you must respond. A response had to be made to that delivery truck fire, a response must be made to a budget change, and a response will surely be made to the energy crisis.

There must be some reward for effort, and the obvious reward is survival. The bureaucracies that we work in have the same drive for survival as we ourselves have. The problems associated with change when people do not see the results as being good may be considerable. People may not see that there is a reward. It is in this area that we are going to have some of the great conflicts in library work: between large groups and small. The final prerequisite is that there must be leadership, and here all of us have a responsibility. I suspect we will lead when necessary, not because we are all so enamored of change, but because we, too, want to survive.

Ely finishes his paper by pointing out that life has changed and that we don't have the time to reflect on it. We are now geared toward jet aircraft and computers. I would suggest that we in the information business, in the communications enterprise, are probably less affected by jets and computers than other people are, even though we may use jets and computers, and use them constantly.

The real model-setter for us is the telephone, as unpleasant a thought as that may be. It is probably, in most of our patrons' minds, the obvious, efficient, useful, cheap application of new technology — the effective communication device. One picks up the telephone, and within one or two seconds hears a dial tone. That tells the person the system is working. (We do not have that kind of response in the library!) It then takes only some twelve seconds to dial, and one knows from clues all along whether the system is working; if it doesn't work, the person hangs up within four to eight seconds. That is the extraordinary response time that we all expect. (We are not matching it in libraries!) The telephone system is extremely accurate. If we get a wrong number, we assume right away that it is our fault, not the system's fault, and that is an extraordinary admission. The company produces a catalog once a year that is quite efficient as a system for indexing. (By the way, if Bell ever gets approval for charges for directory assistance and for information, I suspect that libraries can start charging at the reference desk.) Society uses the telephone system as a model so much so that it is, in fact, going to make or break us. Living with the model of "Ma Bell" may be an annoying or scary idea, but I think it is true.

Ely's paper expresses some ideas about external and internal forces for change. I will leave you with the idea that some of the concepts discussed at this institute have been external, e.g., the community information idea, aging, the demography change, the demand for accountability, and perhaps changing continuing education. There are, however, also some internal forces: the children's library problem, internal automation, efficiency, and the like.

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Creating the Conditions for Change

> **We must dispose of the notion that social change is a process that alters a tranquil status quo. Today there is no tranquility to alter. Given the swift transformations in our world, even institutions that are fairly young, as history goes, find themselves woefully out of date. The rush of change brings a kind of instant antiquity.[1]**

Humanity has always lived in a time of change, but in the past 70 years the conditions of life have been altered more than in all of the previous 2,000 years. The only constant seems to be change itself.

Today we are living through a change in the human scene that challenges the ideas and the activities which we have inherited from the past. The transformations of our natural environment, the relationships among people, the new technologies, and the apparently inverted value systems call for new ways of coping with the changes that are about us.

The unsettled time in which we live has been brought about by a variety of new developments, some of which can be isolated as *the* causal factor; consider, for example, the population explosion; the pollution of air, land and water; the demand for energy, computers and automation; and the rising expectations of people. All these contemporary concerns press upon us, and we often find ourselves unable or unwilling to cope with them.

Changes will occur, and to resent them makes us less able to make the necessary adaptations. If the prospect of change fills us with anxiety, the least we can do is to analyze the situation, determine the worst that can happen, and try to improve upon that; or, better, we could estimate the best that might happen and try to enhance the factors that will help to bring about the best results. The anxious person will run away from change with the hope that it will disappear. This is clearly a time of coping, not retreating; it is a time for deliberate movement rather than passive response. The purpose of this paper is to consider the meaning of change, the process of change, and the conditions for facilitating change so that both the individual and the institution can emerge as proactive participants helping to create the future rather than being shaped by it.

THE MEANING OF CHANGE

Change is often synonymous with innovation because innovation infers change. In this paper these terms will be used somewhat differently. "An innovation is an idea, practice, or object perceived as new by an individual."[2] Acceptance or adoption of an innovation usually demands some type of change. It is possible for an innovation to exist apart from an individual or institution, but as soon as that individual or institution attempts to adopt or adapt the innovation, the process of change occurs: "This view of innovation as a process starting with the recognition of a potential demand for, and technical feasibility of, an item and ending with its widespread utilization is perhaps the broadest use of the term innovation in the existing literature. It blends the idea of invention with that of adoption."[3]

There has been what Rogers calls a "proinnovation bias."[4] This bias assumes that innovation is good and that everyone should adopt the new ideas or practice. Rejection, in this context, is an undesirable or irrational decision. This attitude persists as a residue from the earliest diffusion research which was concerned about the adoption of hybrid corn by farmers. It is no longer adequate.

Many innovations do not have universal usefulness. Some may be appropriate for certain individuals or organizations at some point in time but not for others. Neither stability nor change has any intrinsic value. The worth of stability is in the goodness it preserves, while the worth of change is in the goodness it brings about.

For good or for ill, change is about us. It creates a disequilibrium, a dissonance, a division between what is and what ought to be. One simple answer to the dilemmas presented by change is to try to understand the process. We need to study the process of innovation and change so that we can use the principles to our advantage.

THE PROCESS OF CHANGE

The process of change is at once a simple and a complex concept. The simple dimension presents change in the guise of conventional wisdom. A new idea is presented, considered, and rejected or adopted. The complex dimension portrays change as multidimensional, a process in which an innovation "is communicated through certain channels, over time, among the members of a social system."[5] This view considers such variables as decision processes, stages of implementation, control, resistance to innovation, characteristics of persons and organizations, feedback mechanisms, and other elements. This "soft" area of social science research is difficult to discuss in simple, empirically-based paradigms. Nevertheless, as an elusive area of research, it challenges a small but diligent group of researchers from sociology, anthropology, education, communication, marketing, and other disciplines to seek a more comprehensive understanding of the process.

The Research Tradition

Over the past thirty-five years, increasing attention has been given to the process of bringing about change in individuals and organizations.[6] Empirical research has centered on the introduction of innovations, with the adoption of an innovation being the dependent variable. Within this context, three categories of investigation have emerged, i.e. those concerned with characteristics of: (1) adopters (such as age, status, or attitude); (2) innovations (such as relative advantage or observability); and (3) the change process (such as communications, decision-making) or techniques of introducing innovations. A guiding assumption of these investigations has been that change is needed or desirable, and further, that to identify its correlation, to predict outcomes, and eventually to understand and control change will make the process more expeditious. This process is called planned change, to distinguish it from random or chance change.

A Model of the Process

Several models of the innovation/change process have been posited. Some models focus on change in the individual, while others are concerned with change within an organization. One way of relating the individual to the organization and to the larger society is to consider individuals as discrete entities, randomly distributed. When those individuals are brought together, however, institutional groupings emerge, e.g., families, schools, businesses, churches, and the like (see Figure 1). Many of these institutional ties overlap. All of these institutions, which are congeries of people, are elements of a larger society of which all institutions are a part. Change may be brought about by forces external to the individual, e.g., from the organization or the larger society, or they may emerge from individuals who then affect the institution and perhaps the larger society. Examples of the external forces might be the increasing mass of information and the pervasive nature of computers. On the other hand, internal forces might be exerted by leaders in response to external forces or through creative inventions which arise from an individual without regard to external forces. The recent presidential election might be an example of external forces providing an external stimulus to which the new president must respond. During the campaign he did not spell out how his proposals would be carried out, but now he must. An example of internal forces might be observed in the work of John Cage or Charles Ives in music or in Frank Lloyd Wright's work in architecture.

One good example of a change model oriented to individuals was developed by Rogers and Shoemaker (see Figure 2). Organizational change and innovation is summarized in a comprehensive model developed by Zaltman, Duncan and Holbek (see Figure 3). Regardless of which model is most helpful in understanding the process of change, the point to remember is that change is a *process*. One flaw in thinking about change is to consider change as final rather than continuing, i.e. to believe that the latest change is the last change.

A useful summary of the topology of innovation is offered by Zaltman in which three dimensions are considered (see Figure 4). The various types of innovation are not mutually exclusive, but certain combinations are more likely to come about than others: "Programmed innovations are usually routine innovations, whereas nonprogrammed innovations, particularly of the distress variety, often appear as relatively radical innovations because they tend to produce changes in the subsystems of the organization."[7]

The paradigms above help to illustrate the process in general, but innovation and change cannot be usefully considered in the abstract because innovations are situation specific. The full power of the change models and the generalizations from the research can only be demonstrated when they are superimposed on actual cases. Hagen indicates that there is no such thing as an innovation in the abstract.[8] It must rather be in a specific field, involving specific materials and relationships among people.

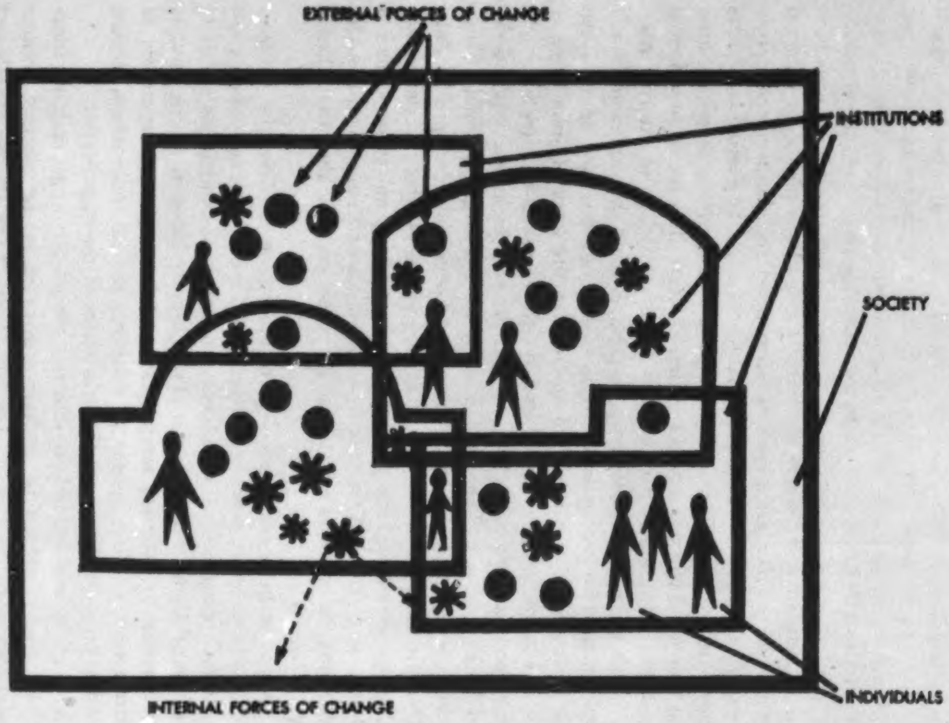
EXTERNAL FORCES OF CHANGE
INSTITUTIONS
SOCIETY
INDIVIDUALS
INTERNAL FORCES OF CHANGE

Figure 1. The Relationship of the Individual to the Organization and Society

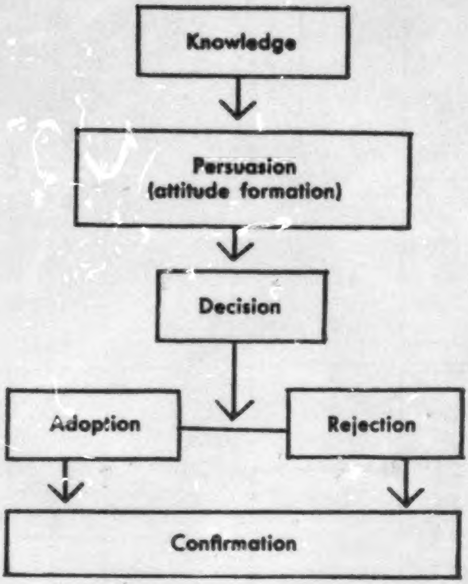
Knowledge
Persuasion (attitude formation)
Decision
Adoption
Rejection
Confirmation

Figure 2. An Individual-Oriented Model of the Change Process

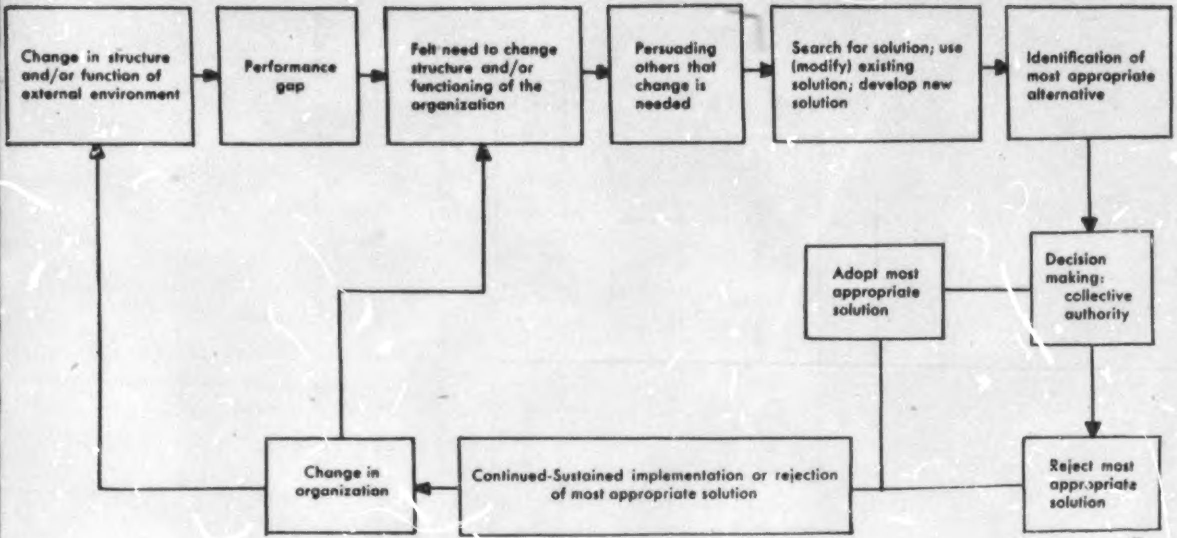
Change in structure and/or function of external environment
Performance gap
Felt need to change structure and/or functioning of the organization
Persuading others that change is needed
Search for solution; use (modify) existing solution; develop new solution
Identification of most appropriate alternative
Decision making: collective authority
Adopt most appropriate solution
Reject most appropriate solution
Continued-Sustained implementation or rejection of most appropriate solution
Change in organization

Figure 3. A Model of Organizational Change and Innovation

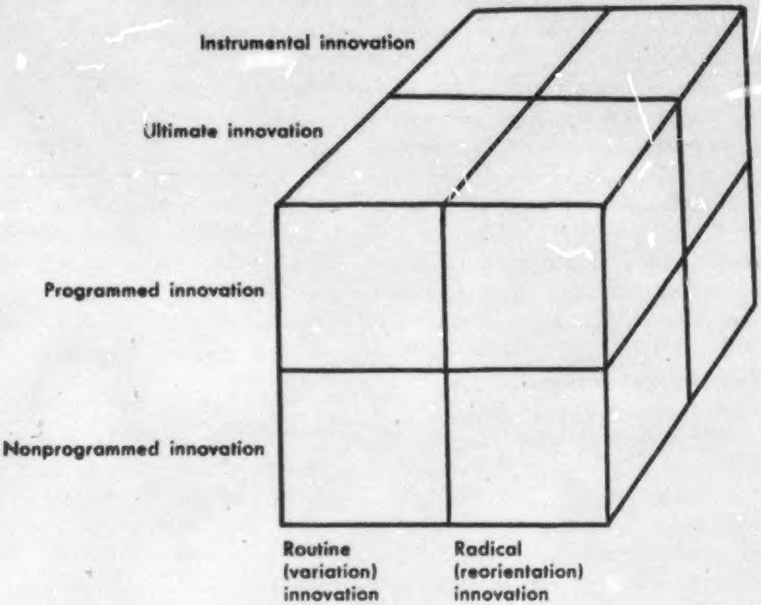
Instrumental innovation
Ultimate innovation
Programmed innovation
Nonprogrammed innovation
Routine (variation) innovation
Radical (reorientation) innovation

Figure 4. Combinations of Types of Innovation

CHANGING TIMES, CHANGING LIBRARIES

This conference is considering social change in the next twenty-five years and the impact of that change on libraries. By entertaining these future projections and estimating the potential changes which might stem from them, you are taking the first step in helping to create the future in which you want to live and work. Lest you have to wait twenty-five years to put into practice what we know about coping with innovation and change, let us consider some of the innovations which have already raised the anxieties of librarians across this nation and use these innovations as specific examples of changes which are occurring and will continue to occur. Although they may not be as much on the frontier as some of the projections you have heard, they fit the generic definition for innovations — an idea, practice, or object perceived as new by an individual.

In 1974 Elizabeth Stone published a report on *Continuing Library and Information Science Education* for the National Commission on Libraries and Information Science.[9] In that report she summarized a study she had conducted earlier regarding continuing education content areas that had the highest priority for practicing librarians for the next three to five years.[10] (Since the study was conducted in 1973, the 3-5 year period would end 1976-78.) While this is certainly not a long-range projection, it still serves as an indicator of needs. In priority order those needs are: human relations, nonprint media, management, automation, and public relations. From these needs may be inferred several innovations and changes which the library is facing and will continue to face in the immediate future. The growing use of nonprint media in the public library[11] and the increasing influence of a wide variety of computer-based information systems are being viewed as major innovations in the library. The management procedures — such as management by objectives (MBO), program budgeting, and cost-benefit analysis — are new to many library administrators. The human potential movement has introduced new approaches, such as transactional analysis and organization development, which have direct applications to human relationships in the library both among the staff and in serving clients. In the face of these innovations within the library context, there is often a fear of change — the necessity of leaving the not-entirely-satisfactory routines of the present and substituting for them the often hazardous decision-making activities of the future. Many persons dread the thought of insecurity, of reorganizing old habit patterns. Innovation is not uniformly relished.

The resistance factors must be noted and allotted for in any design for innovation and change. The innovations listed above are imminent. Librarians must ask how soon each innovation will occur and how library professionals can be prepared to cope with the changes which the innovation will demand. In other words, what are the conditions in which innovation and change can be facilitated with a minimum amount of anxiety? There are certain conditions which, if present, will enhance the potential of an innovation being accepted and change being brought about.

THE CONDITIONS OF CHANGE

Broadly speaking, there are two types of change which occur:

1. *radical* — those which require significant shifts of personnel, resources, and facilities such as a complete computer-based circulation control system or integration of the print and nonprint collections; and
2. *routine* — those which cause relatively small shifts in procedures, role definition, and management structures such as program budgeting.

While the major (or radical) changes are much more dramatic and, in the long run, provide the greatest hope for significant new developments in the field, they are much more complex to study than the routine changes. Substantial time and financial investment is necessary to study major changes — and this study clearly needs to be done. Routine changes, however, permit microstudies of the change process. By concentrating on minor changes in a programmatic research sense, a series of findings can be parlayed into a synergistic outcome. Once changes are understood in small proportions, the likelihood of generalizations being formulated for the larger problem is enhanced. Much of the medical research and market research in mass communications follows this procedure.

The conditions which apply to innovations in general can be applied to the library setting:

1. *There must be dissatisfaction with the present situation.* Another way of expressing the same condition is to say that there must be a need to change. If a librarian does not have a problem, innovation will seem irrelevant. Dissatisfaction can arise from such situations as assessment of staff productivity or perceptions of the quality of service rendered to clients. Dissatisfaction may be induced by an increasing amount of client demand or a shortage of resources.
2. *A librarian must know about possible innovations and possess the skills to implement them.* Unless a person knows about new approaches to human relations, it is unlikely that any action can take place. A librarian needs to solve his/her own problems on his/her own terms, but often has no idea how to proceed. Individuals must have the skills to develop innovative practices.

3. *A commitment must be made by all persons involved.* Psychological ownership of an innovation is important to the persons involved. If a librarian is going to spend part of his/her time in planning, preparing, and introducing an innovation, there must be a commitment to do so. Likewise, members of the staff must share the commitment if time and resources are to be made available. Related to this condition is the concept of critical mass. If only one person embarks on an innovative activity, no matter how committed, the likelihood of success is minimal; however, if one person is joined by one committed and knowledgeable colleague (preferably more), the likelihood of success is enhanced. In addition, if the library executive gives visible and tangible support, success is almost assured.
4. *Resources must be provided.* Support services vary depending upon the innovation, but there are generally two types of resources: human and material. Human resources include assistants, secretarial help and knowledgeable people — often external consultants who can help with the design, implementation and evaluation of the innovation. Material resources include such things as equipment, supplies and space.
5. *Time must be made available.* Perhaps time is a resource, and it does require a commitment, but several studies have shown this condition to be so important that it qualifies for separate citation. It is not realistic to expect a librarian to sacrifice personal time to develop innovations, but it is possible to allocate professional time to implement the new activity. Usually time has to come from reallocation of existing responsibilities.
6. *There must be some reward for the effort.* Rewards vary depending upon the value system of the librarian. It is sufficient for some to gain intrinsic satisfaction from perceptions of improvement of services resulting from planned change. For others, more tangible rewards are required. For example, the availability of time and/or resources previously unavailable might be a sufficient reward. Released time gives official recognition to the innovation and hence confers status on it. Extra help from additional staff, if necessary, might provide benefits. The resources and guidance of an empathetic consultant could help as well. The recognition, encouragement and visible acknowledgment of innovative effort by a board of trustees or administrative superiors is ego-building.
7. *There must be leadership.* Most successful innovations can be traced to a single person who has the vision, persistence, authority, and charisma to move people to action. Leadership is one of the essential conditions for change and must be exercised in an environment which possesses the other conditions. Strong leadership cannot transcend the need for resources, time and a reward system. No matter how kindly or inspired the

leader may be, a staff which possesses the necessary skills and commitment is necessary to carry through the innovation.

CONDITIONS WHICH HINDER CHANGE

In a comprehensive summary of the research literature, Mayhew outlines the characteristics which exemplify unsuccessful efforts to innovate in institutions of higher education.[12] His ideas can be adapted for libraries:

1. Lack of relevant, persuasive evidence that innovations or changes produce results different from those obtained through more traditional ways is a significant deterrent.
2. The lack of a clearly expressed purpose or reason for an innovation or change may be a significant condition for failure.
3. If a given organizational system is overloaded with too many undertakings at one time, the chance for successful implementation and/or adoption of change decreases substantially.
4. Related to institutional hyperactivity is the problem of fatigue.
5. A possible condition for failure of many innovations is the lack of collective memory or actual history as to what has been tried before and to what effect.
6. Time and time again attempts to innovate appear to be affected seriously by personal relationships, personality peculiarities, or changes in personnel.
7. A major stimulus to innovation and change is the desire by institutions to satisfy their clientele. Libraries, if they are to survive as social institutions, must detect and respond to social needs, demands, pressures, and changes.

Knowledge of the conditions which facilitate and hinder change should be helpful in attempting to create an environment in which innovation and change can occur.

NEXT STEPS

"The rush of change brings a kind of instant antiquity." Gardner's observation is confirmed by the acceleration of all aspects of living. Life is not attuned to the old measurements: lifetimes, generations, years, seasons. It is geared to the speed of the jet aircraft and the computer. Every moment is filled with something that must be done. Futurists are not so concerned with the feasibility of invention, but with the rate of invention. The change of speed has taken us unaware. For hundreds of years before the beginning of the nineteenth century, there had been no major acceleration of change; then came changes in the technology of distance that revolutionized travel and communication.

The speed of change has confronted the library with massive amounts of information. Coping with this change is the means to survival. The only alternative is flight from reality, which results in decay of all that has been gained over the past two centuries. We need to have not only eyes and ears to learn what is going on, but minds to understand what the consequences will be if we fail to act.

One simple answer is to understand the process of change, to help prepare the conditions for change to occur, and then to embrace those innovations which will help to provide information to those who need and seek it. To do less is to accept the dictation of uncontrolled events.

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ACRONYMS

ALA — American Library Association
ARL — Association of Research Libraries
EFE — Environmentalists for Full Employment
GNP — Gross National Product
ICBM — Intercontinental ballistic missile
MBO — Management by Objectives
MRAP — Management, Review and Analysis Program
NEA — National Education Association
NSF — National Science Foundation
OCLC — Ohio College Library Center
P.L. — Public Law
PLATO — Programmed Logic for Automated Teaching Operations
SLA — Special Libraries Association
SRI — Stanford Research Institute
SST — Supersonic transport

INDEX

Academic libraries, priorities, 104-05
Accreditation, shortcomings, 19
Acquisitions, review of, 19-20; academic libraries, 104-05
Administration, women in, 71-72
American Library Association, legislation, 54-57
Association of Research Libraries, management techniques, 108-09
Automation, *see* Communications technology

Canadian Library Association, interlibrary cooperation, 77-78
Cataloging, computer-based, 87-88
Change, effect on libraries, vii-x, 15-22, 36, 145-50, 158-62; analysis of, 1-14, 150-57; governmental, 23-43; women, 59-69; electronic media, 86-95; knowledge needs, 97-111; futures research, 113-29; sexual identities, 131-38; organizational, 152-56
Citizen participation, in government, 38, 39-41
Collections, standards, 19-20; academic libraries, 104-05
Communications technology, impact, 11-12; in libraries, 16-18, 57, 91-95; PLATO, 81-89, 106-07; video disc, 89-91; knowledge needs, 100-01, 104
Cooperation, *see* Interlibrary cooperation
Copyright, legislation, 56-57, 78; software, 87, 90-91, 95, 101, 107-08
Culture, effects of leisure, 10-11, 109-10; impact of television, 11-12; changes in, 27-30, 32-36, 41-42

Defense budget, 25-26

Economics, social change, vii, 9-10, 27-39 *passim*, 42-43; female employment, 59-70
Education, crisis in, 6-8, 10; of librarians, 18-20, 71; legislation, 57; employment of women, 61-62; electronic media, 81-96; knowledge needs, 97-111 *passim;* futures research, 113-29; of children, 126-29
Education Amendments of 1976, 57
Educational/Broadcasting Act, 57
Electronic media, 81-95, 106-07, 145, 147. *See also* Communications technology
Elementary and Secondary Education Act, amendments, 57
Employment, women, 59-68
Energy consumption, 117-18
Environmental policies, 27-38 *passim*

Federal government, *see* Government
Fees, interlibrary loans, 77
Fisher, H.L.A., 12-13
Funding, *see* Legislation

Prepared by: Mary Kelly Black

Futures research, 115-29. *See also* Change

Government, social change, viii, 4-5, 9-10; federal budget, 24-27; future, 23-43; library legislation, 53-58

Higher Education Act, amendments, 57

Industrialization, future, 27-37 *passim*, 43, 101-02, 118-19
Information centers, nomenclature, 76; future needs, 100
Interlibrary cooperation, special libraries, 77-78; future needs, 105

Knowledge, future needs, 97-111

Leisure, impact on culture, 10-11; use of, 109-10
Legislation, process, 54-57; for women, 67, 73. *See also* Government
Librarians, qualities, 16-17, 18-20; women, 61, 70-79; electronic media, 91-95
Libraries, impact of change, vii-x, 15-22, 36, 145-50, 158-62; legislation, 55-58; women in, 61, 70-79; communications technologies, 91-95; future knowledge needs, 97-111 *passim*, 140-43; futures research, 124-25
Library and Information Services, White House Conference on, 57-58
Library Services Act, history, 55
Loans, *see* Interlibrary cooperation

Machine-readable formats, *see* Communications technology
Mail, electronic, 88
Management by Objectives, 148, 158

National Education Association, futures research, 113-29
National Science Foundation, *Project: Knowledge 2000*, 97-111
Networking, future use, 36, 77-78, 89

Organizational change, 152-56
Outreach services, need for, 105

Personnel, women librarian, 61, 70-79
Photocopying, legality, 56-57, 101, 107-08. *See also* Copyright
PLATO teaching system, 81-89, 91-95, 106-07, 145, 147
Politics, library involvement, 54-57
Population trends, 120-21
Privacy, electronic communications, 89
Programming, PLATO system, 81-89

Reference services, computer-based systems, 89
Research, dissemination of, 106
Retrieval, *see* Communications technology

Salaries, women librarians, 73-76
Science, *see* Technology
Senior citizens, treatment, 11; increase in, 122
Sexual roles, changes, 59-79, 131-38
Social change, *see* Change
Special libraries, employment of women, 70-75
Staff, *see* Personnel

Technology, impact, 5-6, 11-12; in libraries, vii, 16-18, 57, 70, 91-95, 104; and government, 37, 42; electronic media, 81-91; growth of, 100
Television, popular culture, 11-12; legislation, 57; video-disc player, 89-93; use in conference, 97-99

University of Illinois, PLATO system, 81-89, 91-95, 106-07, 145, 147

Video disc, 89-93
Vocational Education Act, amendments, 57
Voting trends, 30-40

White House Conference on Library and Information Services, 57-58
Women, in labor force, 59-68; librarians, 61, 70-79; sexual identities, 131-38